Final

Site Investigation Report
Ammunition Supply Point and Building 4416
Parcels 197(7) and 199(7)

Fort McClellan
Calhoun County, Alabama

Prepared for:

U.S. Army Corps of Engineers, Mobile District
109 St. Joseph Street
Mobile, Alabama 36602

Prepared by:

IT Corporation
312 Directors Drive
Knoxville, Tennessee 37923

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See Attachment 1 - List of Abbreviations and Acronyms.

Executive Summary

In accordance with Contract Number DACA21-96-D-0018, Task Order CK05, IT Corporation completed a site investigation (SI) at the Ammunition Supply Point (ASP) and Building 4416, Parcels 197(7) and 199(7), at Fort McClellan in Calhoun County, Alabama. The SI was conducted to determine whether chemical constituents are present at the site and, if present, whether the concentrations would present an unacceptable risk to human health or the environment. The SI at the ASP and Building 4416, Parcels 197(7) and 199(7), consisted of the sampling and analyses of 30 surface soil samples, 28 subsurface soil samples, 10 depositional soil samples, 8 groundwater samples, 5 surface water samples, and 5 sediment samples. In addition, 8 permanent groundwater monitoring wells were installed in the residuum groundwater zone to facilitate groundwater sample collection, and to provide site-specific geological and hydrogeological characterization information.

The analytical results indicate that metals, volatile organic compounds (VOC), semivolatile organic compounds (SVOC), and chlorinated pesticides were detected in the environmental media sampled. In addition, two nitroexplosive compounds were detected in three of the groundwater samples collected. Polychlorinated biphenyls, chlorinated herbicides, and organophosphorus pesticides were not detected in any of the media sampled. To evaluate whether the detected constituents present an unacceptable risk to human health or the environment, the analytical results were compared to human health site-specific screening levels (SSSL), ecological screening values (ESV), and background screening value for Fort McClellan.

The potential impact to human receptors is expected to be minimal. Although the southern half of the site is projected for use as an industrial area and the northern half is projected for use as a passive recreation area, the soils and groundwater data were screened against residential human health SSSLs to evaluate the site for possible unrestricted future use. The metals that exceeded residential human health SSSLs, with a few limited exceptions, were below their respective background concentration or within the range of background values, and thus do not pose an unacceptable risk to future human receptors. One nitroexplosive compound was detected in one groundwater sample at a concentration exceeding the SSSL. VOC, SVOC, and pesticide concentrations in site media were below SSSLs.

The potential threat to ecological receptors is also expected to be low. Six metals were detected in site media (primarily surface and depositional soils) at concentrations exceeding ESVs and

background concentrations. In addition, the concentrations of three SVOCs and three pesticides exceeded ESVs in a limited number of soil samples. The site is a fenced-in, well-developed area consisting of buildings and paved roads and is projected for use as an industrial/passive recreation area. Based on the low levels and limited spatial distribution of metals and chemical compounds detected, the threat to potential ecological receptors is expected to be low.

Based on the results of the SI, past operations at the ASP and Building 4416, Parcels 197(7) and 199(7), do not appear to have adversely impacted the environment. The metals and organic compounds detected in site media do not pose an unacceptable risk to human health or the environment. Therefore, IT Corporation recommends "No Further Action" and unrestricted land reuse with regard to hazardous, toxic, and radioactive waste at the ASP and Building 4416, Parcels 197(7) and 199(7).

1.0 Introduction

The U.S. Army has selected Fort McClellan (FTMC) located in Calhoun County, Alabama, for closure by the Base Realignment and Closure (BRAC) Commission under Public Laws 100-526 and 101-510. The 1990 Base Closure Act, Public Law 101-510, established the process by which U.S. Department of Defense (DOD) installations would be closed or realigned. The BRAC Environmental Restoration Program requires investigation and cleanup of federal properties prior to transfer to the public domain. The U.S. Army is conducting environmental studies of the impact of suspected contaminants at parcels at FTMC under the management of the U.S. Army Corps of Engineers (USACE)-Mobile District. The USACE contracted with IT Corporation (IT) to provide environmental services for the site investigation (SI) of the Ammunition Supply Point (ASP) and Building 4416, Parcels 197(7) and 199(7), under Contract Number DACA21-96-D-0018, Task Order CK05. The site is hereinafter referred to as the ASP, and includes all associated parcels unless otherwise specified.

This SI report presents specific information and results compiled from the SI, including field sampling and analysis and monitoring well installation activities, conducted at the ASP.

1.1 Project Description

The ASP was identified as an area to be investigated prior to property transfer. The ASP was classified as a Category 7 site in the environmental baseline survey (EBS) (Environmental Science and Engineering, Inc. [ESE], 1998). Category 7 sites are areas that are not evaluated and/or that require further evaluation.

A site-specific field sampling plan (SFSP) attachment (IT, 1999) and a site-specific safety and health plan (SSHP) attachment were finalized in September 1999. The SFSP and SSHP were prepared to provide technical guidance for sample collection and analysis at the ASP. The SFSP was used in conjunction with the SSHP as attachments to the installation-wide work plan (IT, 1998), and the installation-wide sampling and analysis plan (IT, 2000a). The SAP includes the installation-wide safety and health plan and quality assurance plan (QAP).

The SI included field work to collect 30 surface soil samples, 28 subsurface soil samples, 10 depositional soil samples, 8 groundwater samples, 5 surface water samples, and 5 sediment samples to determine if potential site-specific chemicals are present at the ASP, and to provide data useful for supporting any future corrective measures and closure activities.

1.2 Purpose and Objectives

The SI program was designed to collect data from site media and provide a level of defensible data and information in sufficient detail to determine whether chemical constituents are present at the ASP at concentrations that would present an unacceptable risk to human health or the environment. The conclusions of the SI in Chapter 6.0 are based on the comparison of the analytical results to human health site-specific screening levels (SSSL), ecological screening values (ESV), and background screening values for FTMC. The SSSLs and ESVs were developed by IT as part of the human health and ecological risk evaluations associated with SIs being performed under the BRAC Environmental Restoration Program at FTMC. The SSSLs, ESVs, and polynuclear aromatic hydrocarbon (PAH) background screening values are presented in the *Final Human Health and Ecological Screening Values and PAH Background Summary Report* (IT, 2000b). The PAH background screening values were developed by IT at the direction of the BRAC Cleanup Team to address the occurrence of PAH compounds in surface soils as a result of anthropogenic activities at FTMC. Background metals screening values are presented in the *Final Background Metals Survey Report, Fort McClellan, Alabama* (Science Applications International Corporation [SAIC], 1998).

Based on the conclusions presented in this SI report, the BRAC Cleanup Team will decide to propose "No Further Action" at the site or to conduct additional work at the site.

1.3 Site Description and History

The ASP is located along 2nd Avenue in the north-central area of the Main Post (Figure 1-1). The site is southeast of Landfill No. 2 and is bordered on the east by Reservoir Ridge (Figure 1-2). The ASP encompasses approximately 35 acres and contains ten earth-covered magazine bunkers, five aboveground bunkers, an administration building, and two ammunition holding areas (Figure 1-2). The ASP was a high security site that was used primarily for storage of ordnance from approximately 1917 to 1998. The site is surrounded by a chain-link fence.

Building 4416, Parcel 199(7), was reportedly used to store chemical warfare materials (CWM) including sarin (GB), nerve agent (o-ethyl-s[diisopropylaminoethyl]methylphosphonothiolate [VX]), and distilled mustard (HD). Records also indicated that radiological sources were stored in Building 4416. Radioisotopes with atomic numbers 3 to 83 may have been stored at Building 4416, in addition to cesium-137 in sealed sources, and tritium. There were not any reported releases of either CWM or radiological material at the ASP. All CWM and radiological materials were removed from the ASP prior to Base closure in September 1999. Building 4416

is no longer in use and the ASP site is currently controlled and operated by the Alabama Army National Guard.

The site elevation ranges from approximately 775 feet to 940 feet above mean sea level. Cave Creek flows to the west-southwest along the northern boundary of the parcel.

2.0 Previous Investigations

An EBS was conducted by ESE to document current environmental conditions of all FTMC property (ESE, 1998). The study was to identify sites that, based on available information, have no history of contamination and comply with DOD guidance for fast-track cleanup at closing installations. The EBS also provides a baseline picture of FTMC properties by identifying and categorizing the properties by seven criteria:

1. Areas where no storage, release, or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas)

2. Areas where only release or disposal of petroleum products has occurred

3. Areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response

4. Areas where release, disposal, and/or migration of hazardous substances has occurred, and all removal or remedial actions to protect human health and the environment have been taken

5. Areas where release, disposal, and/or migration of hazardous substances has occurred, and removal or remedial actions are underway, but all required remedial actions have not yet been taken

6. Areas where release, disposal, and/or migration of hazardous substances has occurred, but required actions have not yet been implemented

7. Areas that are not evaluated or require additional evaluation.

The EBS was conducted in accordance with the Community Environmental Response Facilitation Act (CERFA) (CERFA-Public Law 102-426) protocols and DOD policy regarding contamination assessment. Record searches and reviews were performed on all reasonably available documents from FTMC, the Alabama Department of Environmental Management (ADEM), the U.S. Environmental Protection Agency (EPA) Region IV, and Calhoun County, as well as a database search of Comprehensive Environmental Response, Compensation, and Liability Act-regulated substances, petroleum products, and Resource Conservation and Recovery Act-regulated facilities. Available historic maps and aerial photographs were reviewed to document historic land uses. Personal and telephone interviews of past and present FTMC

employees and military personnel were conducted. In addition, visual site inspections were conducted to verify conditions of specific property parcels.

The ASP was identified as a Category 7 CERFA site: areas that are not evaluated or require additional evaluation. The site lacked adequate documentation and therefore required evaluation to determine the environmental condition of the parcel. There were not any other investigations identified for the ASP.

3.0 Current Site Investigation Activities

This chapter summarizes SI activities conducted by IT at the ASP, including unexploded ordnance (UXO) avoidance, environmental sampling and analysis, and groundwater monitoring well installation activities.

3.1 UXO Avoidance

UXO avoidance was performed at the ASP following methodology outlined in Section 4.1.7 of the SAP (IT, 2000a). IT UXO personnel used a Schonstedt Heliflux Magnetic Locator to perform a surface sweep of the parcel prior to site access. After the parcel was cleared for access, sample locations were cleared using a Foerster Ferex Electromagnetic Detector following procedures outlined in Section 4.1.7.3 of the SAP (IT, 2000a).

3.2 Environmental Sampling

The environmental sampling performed during the SI at ASP included the collection of surface soil samples, subsurface soil samples, depositional soil samples, surface water samples, sediment samples, and groundwater samples for chemical analysis. The sample locations were determined by observing site physical characteristics noted during a site walkover, by reviewing historical documents pertaining to activities conducted at the site, and based on UXO avoidance activities. The sample locations, media, and rationale are summarized in Table 3-1. Sampling locations are shown on Figure 3-1. Samples were submitted for laboratory analyses of site-related parameters listed in Section 3.4.

3.2.1 Surface and Depositional Soil Sampling

Surface soil samples were collected from 30 locations, and depositional soil samples were collected from 10 locations at the ASP. Soil sampling locations and rationale are presented in Table 3-1. Sampling locations are shown on Figure 3-1. Sample designations and quality assurance/quality control (QA/QC) samples are listed in Table 3-2. Soil sampling locations were determined in the field by the on-site geologist based on UXO avoidance activities, sampling rationale, presence of surface structures, site topography, and buried utilities.

Sample Collection. Surface soil samples were collected from the upper 1 foot of soil by either direct-push technology or with a 3-inch diameter stainless-steel hand auger using the methodology specified in Section 4.9 of the SAP (IT, 2000a). Depositional soil samples were collected from the upper 0.5 foot of soil with either a 3-inch diameter stainless-steel hand auger

Table 3-1

Sampling Locations And Rationale
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Location	Sample Media	Sample Location Rationale
FTA-197-GP01	Surface soil and subsurface soil	Surface and subsurface soil samples were collected on the south side of Building 4417.
FTA-197-GP02	Surface soil and subsurface soil	Surface and subsurface soil samples were collected on the west side (in front) of Building 4417.
FTA-197-GP03	Surface soil and subsurface soil	Surface and subsurface soil samples were collected on the north side of Building 4411.
FTA-197-GP04	Surface soil and subsurface soil	Surface and subsurface soil samples were collected on the west side (in front) of Building 4411.
FTA-197-GP05	Surface soil and subsurface soil	Surface and subsurface soil samples were collected on the northwest side of Building 4410.
FTA-197-GP06	Surface soil and subsurface soil	Surface and subsurface soil samples were collected on the southwest side (in front) of Building 4410.
FTA-197-GP07	Surface soil and subsurface soil	Surface and subsurface soil samples were collected on the southeast side (in front) of Building 4427.
FTA-197-GP08	Surface soil and subsurface soil	Surface and subsurface soil samples were collected on the southwest side of Building 4427.
FTA-197-GP09	Surface soil and subsurface soil	Surface and subsurface soil samples were collected on the southeast side (in front) of Building 4426.
FTA-197-GP10	Surface soil and subsurface soil	Surface and subsurface soil samples were collected on the southwest side of Building 4426.
FTA-197-GP11	Surface soil and subsurface soil	Surface and subsurface soil samples were collected on the southwest side of Building 4425.
FTA-197-GP12	Surface soil and subsurface soil	Surface and subsurface soil samples were collected on the southeast side (in front) of Building 4425.
FTA-197-GP13	Surface soil and subsurface soil	Surface and subsurface soil samples were collected in front (east) of Building 4405.
FTA-197-GP14(SS)	Surface soil	A surface soil sample was collected on the west side of Building 4405.
FTA-197-GP14	Subsurface soil	A subsurface soil sample was collected on the west side of Building 4405, just west of the surface soil sampling location FTA-197-GP14(SS).
FTA-197-GP15	Surface soil and subsurface soil	Surface and subsurface soil samples were collected in front (east) of Building 4424.
FTA-197-GP16	Surface soil and subsurface soil	Surface and subsurface soil samples were collected on the south end of Building 4424.
FTA-197-GP17(SS)	Surface soil	A surface soil sample was collected on the west side of Building 4402.
FTA-197-GP17	Subsurface soil	A subsurface soil sample was collected near Building 4402, just southwest of the surface soil sampling location FTA-197-GP17(SS).
FTA-197-GP18(SS)	Surface soil	A surface soil sample was collected on the west side of Building 4401.
FTA-197-GP18	Subsurface soil	A subsurface soil sample was collected near Building 4401, just southwest of the surface soil sampling location FTA-197-GP18(SS).
FTA-197-GP19	Surface soil and subsurface soil	Surface and subsurface soil samples were collected in front (southeast) of Building 4416.
FTA-197-GP20	Surface soil and subsurface soil	Surface and subsurface soil samples were collected in front (southeast) of Building 4415.
FTA-197-GP21	Surface soil and subsurface soil	Surface and subsurface soil samples were collected from the west side of Building 4413.

Table 3-1

Sampling Locations And Rationale
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Location	Sample Media	Sample Location Rationale
FTA-197-GP22	Surface soil and subsurface soil	Surface and subsurface soil samples were collected on the south side of Building 4413.
FTA-197-GP23	Surface soil and subsurface soil	Surface and subsurface soil samples were collected near Building 4412.
FTA-197-GP24	Surface soil and subsurface soil	Surface and subsurface soil samples were collected on the south side of Building 4412.
FTA-197-GP25	Surface soil and subsurface soil	Surface and subsurface soil samples were collected in front (near north end) of Building 4420.
FTA-197-GP26	Surface soil and subsurface soil	Surface and subsurface soil samples were collected in front (near south end) of Building 4420.
FTA-197-GP27	Surface soil	Surface soil sample was collected in front (south) of ammunition holding area (AHA), Building 4423.
FTA-197-GP28	Surface soil	Surface soil sample was collected in front (south) of AHA, Building 4422.
FTA-197-DEP01	Depositional Soil	Depositional soil sample was collected from the drainage area on east side of the road across from AHA.
FTA-197-DEP02	Depositional Soil	Depositional soil sample was collected from the drainage area on the south side of the road, east of the intersection, across from Building 4401.
FTA-197-DEP03	Depositional Soil	Depositional soil sample was collected from the drainage area on the east side of the road across from Building 4402.
FTA-197-DEP04	Depositional Soil	Depositional soil sample was collected from the drainage area on the east side of the road near the scrap metal storage area.
FTA-197-DEP05	Depositional Soil	Depositional soil sample was collected from the drainage area on the west side of the road and southwest of Building 4425.
FTA-197-DEP06	Depositional Soil	Depositional soil sample was collected from the intermittent drainage that flows southwest downgradient of Building 4415.
FTA-197-DEP07	Depositional Soil	Depositional soil sample was collected from the intermittent drainage southeast of the road and downgradient from Building 4416.
FTA-197-DEP08	Depositional Soil	Depositional soil sample was collected from the intermittent drainage northwest and downgradient from Building 4411.
FTA-197-DEP09	Depositional Soil	Depositional soil sample was collected from the drainage area on the east side of the road at a point approximately midway between Building 4410 and Building 4427.
FTA-197-DEP10	Depositional Soil	Depositional soil sample was collected from a drainage area at the southwest corner of the parcel boundary.
FTA-197-SW/SD01	Surface Water and Sediment	Surface water and sediment samples were collected from Cave Creek southeast of Building 4417.
FTA-197-SW/SD02	Surface Water and Sediment	Surface water and sediment samples were collected from Cave Creek north of Building 4411.
FTA-197-SW/SD05	Surface Water and Sediment	Surface water and sediment samples were collected from the intermittent drainage that flows north between Buildings 4425 and 4426.
FTA-197-SW/SD06	Surface Water and Sediment	Surface water and sediment samples were collected from the intermittent drainage south of the road and across from Building 4426.
FTA-197-SW/SD07	Surface Water and Sediment	Surface water and sediment samples were collected from the intermittent drainage that flows west between Buildings 4401 and 4402.
FTA-197-MW01	Groundwater	A groundwater sample was collected from monitoring well installed downgradient of Building 4417.
FTA-197-MW02	Groundwater	A groundwater sample was collected from monitoring well installed west and downgradient of Buildings 4426 and 4427.
FTA-197-MW03	Groundwater	A groundwater sample was collected from monitoring well installed west and downgradient of Building 4405.
FTA-197-MW04	Groundwater	A groundwater sample was collected from monitoring well installed southwest of Building 4424.

Table 3-1

Sampling Locations And Rationale
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Location	Sample Media	Sample Location Rationale
FTA-197-MW05	Groundwater	A groundwater sample was collected from monitoring well installed approximately 400 feet northeast of Building 4416, upgradient of the ASP.
FTA-197-MW06	Groundwater	A groundwater sample was collected from monitoring well installed in the southern portion of the site.
FTA-197-MW07(SS) FTA-197-MW07(W)	Surface soil, subsurface soil, and groundwater	Surface soil, subsurface soil, and groundwater samples were collected southwest and downgradient of Building 4416.
FTA-197-MW08	Surface soil, subsurface soil, and groundwater	Surface soil, subsurface soil, and groundwater samples were collected southwest and downgradient of Building 4415.

Table 3-2

Surface, Subsurface, and Depositional Soil Sample Designations and QA/QC Samples
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County Alabama

Sample Location	Sample Designation	Sample Depth (ft)	QA/QC Samples			Analytical Suite
			Field Duplicates	Field Splits	MS/MSD	
FTA-197-GP01	FTA-197-GP01-SS-CA0001-REG	0-1			FTA-197-GP01-SS-CA0001-MS FTA-197-GP01-SS-CA0001-MSD	TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP01-DS-CA0002-REG	8-10				
FTA-197-GP02	FTA-197-GP02-SS-CA0003-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP02-DS-CA0004-REG	6-9	FTA-197-GP02-DS-CA0005-FD	FTA-197-GP02-DS-CA0006-FS		
FTA-197-GP03	FTA-197-GP03-SS-CA0007-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP03-DS-CA0008-REG	10-12				
FTA-197-GP04	FTA-197-GP04-SS-CA0009-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP04-DS-CA0010-REG	10-12				
FTA-197-GP05	FTA-197-GP05-SS-CA0011-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP05-DS-CA0012-REG	10-12				
FTA-197-GP06	FTA-197-GP06-SS-CA0013-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP06-DS-CA0014-REG	6-8				
FTA-197-GP07	FTA-197-GP07-SS-CA0015-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP07-DS-CA0016-REG	8-11			FTA-197-GP07-DS-CA0016-MS FTA-197-GP07-DS-CA0016-MSD	
FTA-197-GP08	FTA-197-GP08-SS-CA0017-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP08-DS-CA0018-REG	8-10				
FTA-197-GP09	FTA-197-GP09-SS-CA0019-REG	0-1	FTA-197-GP09-SS-CA0020-FD	FTA-197-GP09-SS-CA0021-FS		TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP09-DS-CA0022-REG	9-11				
FTA-197-GP10	FTA-197-GP10-SS-CA0023-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP10-DS-CA0024-REG	6-8				
FTA-197-GP11	FTA-197-GP11-SS-CA0025-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP11-DS-CA0026-REG	8-9				

Table 3-2

Surface, Subsurface, and Depositional Soil Sample Designations and QA/QC Samples
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County Alabama

Sample Location	Sample Designation	Sample Depth (ft)	QA/QC Samples			Analytical Suite
			Field Duplicates	Field Splits	MS/MSD	
FTA-197-GP12	FTA-197-GP12-SS-CA0027-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP12-DS-CA0028-REG	10-12				
FTA-197-GP13	FTA-197-GP13-SS-CA0029-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP13-DS-CA0030-REG	3-6	FTA-197-GP13-DS-CA0031-FD	FTA-197-GP13-DS-CA0032-FS		
FTA-197-GP14	FTA-197-GP14-SS-CA0033-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP14-DS-CA0034-REG	6-8				
FTA-197-GP15	FTA-197-GP15-SS-CA0035-REG	0-1	FTA-197-GP15-SS-CA0036-FD			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP15-DS-CA0037-REG	2-4				
FTA-197-GP16	FTA-197-GP16-SS-CA0038-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP16-DS-CA0039-REG	8-10				
FTA-197-GP17	FTA-197-GP17-SS-CA0040-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP17-DS-CA0041-REG	8-10			FTA-197-GP17-DS-CA0041-MS FTA-197-GP17-DS-CA0041-MSD	
FTA-197-GP18	FTA-197-GP18-SS-CA0042-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP18-DS-CA0043-REG	8-11				
FTA-197-GP19	FTA-197-GP19-SS-CA0044-REG	0-1	FTA-197-GP20-SS-CA0045-FD			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP19-DS-CA0046-REG	4-6				
FTA-197-GP20	FTA-197-GP20-SS-CA0047-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP20-DS-CA0048-REG	2-4				
FTA-197-GP21	FTA-197-GP21-SS-CA0049-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP21-DS-CA0050-REG	4-6				
FTA-197-GP22	FTA-197-GP22-SS-CA0051-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP22-DS-CA0052-REG	4-6				

Table 3-2

Surface, Subsurface, and Depositional Soil Sample Designations and QA/QC Samples
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County Alabama

Sample Location	Sample Designation	Sample Depth (ft)	QA/QC Samples			Analytical Suite
			Field Duplicates	Field Splits	MS/MSD	
FTA-197-GP23	FTA-197-GP23-SS-CA0053-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP23-DS-CA0054-REG	4-6				
FTA-197-GP24	FTA-197-GP24-SS-CA0055-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP24-DS-CA0056-REG	9-11				
FTA-197-GP25	FTA-197-GP25-SS-CA0057-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP25-DS-CA0058-REG	10-12				
FTA-197-GP26	FTA-197-GP26-SS-CA0059-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
	FTA-197-GP26-DS-CA0060-REG	2-4				
FTA-197-GP27	FTA-197-GP27-SS-CA0061-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-197-GP28	FTA-197-GP28-SS-CA0062-REG	0-1				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-197-DEP01	FTA-197-DEP01-DEP-CA0063-REG	0-0.5				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-197-DEP02	FTA-197-DEP02-DEP-CA0064-REG	0-0.5				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-197-DEP03	FTA-197-DEP03-DEP-CA0065-REG	0-0.5	FTA-197-DEP03-DEP-CA0066-FD			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-197-DEP04	FTA-197-DEP04-DEP-CA0067-REG	0-0.25				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-197-DEP05	FTA-197-DEP05-DEP-CA0068-REG	0-0.5			FTA-197-DEP05-DEP-CA0068-MS FTA-197-DEP05-DEP-CA0068-MSD	TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives

Table 3-2

Surface, Subsurface, and Depositional Soil Sample Designations and QA/QC Samples
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County Alabama

Sample Location	Sample Designation	Sample Depth (ft)	QA/QC Samples			Analytical Suite
			Field Duplicates	Field Splits	MS/MSD	
FTA-197-DEP06	FTA-197-DEP06-DEP-CA0069-REG	0-0.5				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-197-DEP07	FTA-197-DEP07-DEP-CA0070-REG	0-0.5				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-197-DEP08	FTA-197-DEP08-DEP-CA0075-REG	0-0.5				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-187-DEP09	FTA-197-DEP09-DEP-CA0076-REG	0-0.5				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-197-DEP10	FTA-197-DEP10-DEP-CA0077-REG	0-0.5				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-197-MW07(SS)	FTA-197-MW07-SS-CA0071-REG FTA-197-MW07-DS-CA0072-REG	0-1 6-8				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-197-MW08	FTA-197-MW08-SS-CA0073-REG FTA-197-MW08-DS-CA0074-REG	0-1 2-4				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives

FD - Field duplicate.
FS - Field split.
ft - Feet.
MS/MSD - Matrix spike/matrix spike duplicate.
PCB- Polychlorinated biphenyls
QA/QC - Quality assurance/quality control.
REG - Field sample.
SVOC - Semivolatile organic compound.
TAL - Target analyte list.
TCL - Target compound list.
VOC - Volatile organic compound.

or a stainless-steel spoon. Surface and depositional soil samples were collected by first removing surface debris, such as rocks and vegetation, from the immediate sample area. At some surface soil sampling locations it was necessary to cut and remove asphalt pavement before sample collection. The soil was then collected with the sampling device and screened with a photoionization detector (PID) in accordance with Section 4.7.1.1 of the SAP (IT, 2000a). Samples for volatile organic compound (VOC) analyses were collected directly from the sampler with three EnCore® samplers. The remaining portion of the sample was transferred to a clean stainless-steel bowl, homogenized, and placed in the appropriate sample containers. The samples were analyzed for the parameters listed in Table 3-2 using methods outlined in Section 3.4. Sample collection logs are included in Appendix A.

3.2.2 Subsurface Soil Sampling

Subsurface soil samples were collected from 28 soil borings at the ASP, as shown on Figure 3-1. Subsurface soil sampling locations and rationale are presented in Table 3-1. Subsurface soil sample designations, depths, and QA/QC samples are listed in Table 3-2. Soil boring sampling locations were determined in the field by the on-site geologist based on UXO avoidance activities, sampling rationale, presence of surface structures, site topography, and buried and overhead utilities. IT contracted TEG, Inc., a direct-push technology subcontractor, to assist in subsurface soil sample collection. At three locations (FTA-197-GP14, FTA-197-GP17, and FTA-197-GP18), the subsurface soil sample location was offset approximately 40 feet from the surface soil sample location because of UXO clearance issues. At these locations, the surface soil sample was designated with "(SS)" (Figure 3-1).

Sample Collection. Subsurface soil samples were collected from soil borings at depths greater than 1 foot below ground surface (bgs) in the unsaturated zone. The soil borings were advanced and soil samples collected using the direct-push sampling procedures specified in Section 4.9.1.1 of the SAP (IT, 2000a). The samples were analyzed for the parameters listed in Table 3-2 using methods outlined in Section 3.4. Sample collection logs are included in Appendix A.

Soil samples were collected continuously to 12 feet bgs or until direct-push sampler refusal was encountered. Subsurface soil samples were field screened using a PID in accordance with Section 4.7.1.1 of the SAP (IT, 2000a) to measure for volatile organic vapors. The sample displaying the highest reading was selected and sent to the laboratory for analysis; however, at those locations where PID readings were not greater than background, the deepest sample interval above the saturated zone was submitted for analyses. Samples to be analyzed for VOCs were collected directly from the sampler with three EnCore® samplers. The remaining portion of

the sample was transferred to a clean stainless-steel bowl, homogenized, and placed in the appropriate sample containers. Samples submitted for laboratory analyses are summarized in Table 3-2. The on-site geologist constructed a detailed boring log for each soil boring. The lithological log for each borehole is included in Appendix B.

At the completion of soil sampling, boreholes were abandoned with hydrated bentonite chips following borehole abandonment procedures summarized in Appendix B of the SAP (IT, 2000a).

3.2.3 Well Installation

Eight permanent monitoring wells were installed in the residuum groundwater zone at the ASP to collect groundwater samples for laboratory analyses. The well/groundwater sampling locations are shown on Figure 3-1. Table 3-3 summarizes construction details of the wells installed at the ASP. The well construction logs are included in Appendix B.

IT contracted Miller Drilling, Inc., to install the monitoring wells with a hollow-stem auger rig at the locations shown on Figure 3-1. IT attempted to install the monitoring wells at the locations where direct-push soil samples were collected. However, at one location (FTA-197-MW07), this was not possible because the drill rig could not access the soil boring location. Consequently, the permanent well was installed approximately 40 feet southwest of the soil boring location. The soil boring location was identified with "(SS)," and the associated well location was identified with "(W)." The wells were installed following procedures outlined in Section 4.7 and Appendix C of the SAP (IT, 2000a). The boreholes at these locations were advanced with a 4.25-inch inside diameter (ID) hollow-stem auger from ground surface to the first water-bearing zone in residuum at the well location. The borehole was augered to the depth of direct-push sampler refusal, and samples were collected from the depth of direct-push refusal to the bottom of the borehole. A 2-foot long, 2-inch ID carbon steel split-spoon sampler was driven at 5-foot intervals to collect residuum for observing and describing lithology. Where spoon refusal was encountered, the auger was advanced until the first water bearing zone was encountered. The on-site geologist logging the auger boreholes at the ASP continued the lithological log for each borehole from the depth of split-spoon refusal to the bottom of the auger borehole by logging the auger drill cuttings. The drill cuttings were logged to determine lithologic changes and the approximate depth of groundwater encountered during drilling. This information was used to determine the optimal placement of the monitoring well screen interval and to provide site-specific geological and hydrogeologic information. The lithological log for each borehole is included in Appendix B.

Table 3-3

Monitoring Well Construction Summary
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Well	Northing	Easting	Ground Elevation (ft msl)	TOC Elevation (ft msl)	Well Depth (ft bgs)	Screen Length (ft)	Screen Interval (ft bgs)	Sump Interval (ft bgs)	Well Material
FTA-197-MW01	1175242.99	674134.22	806.62	806.32	12.0	10	1 - 11	11 - 12	2" ID Sch. 40 PVC
FTA-197-MW02	1174968.82	673040.87	782.76	782.53	15.0	5	10 - 15	NA	2" ID Sch. 40 PVC
FTA-197-MW03	1174522.44	672850.36	787.51	787.32	26.0	10	16 - 26	NA	2" ID Sch. 40 PVC
FTA-197-MW04	1174054.21	672872.19	789.33	789.13	29.0	15	14 - 29	NA	2" ID Sch. 40 PVC
FTA-197-MW05	1174621.75	673959.75	932.41	934.89	66.0	15	50.8 - 65.8	NA	2" ID Sch. 40 PVC
FTA-197-MW06	1173772.56	673273.07	801.09	800.88	29.5	15	13.5 - 28.5	28.5 - 29.5	2" ID Sch. 40 PVC
FTA-197-MW07(W)	1174188.61	673785.44	847.82	847.55	89.0	20	67 - 87	87 - 89	2" ID Sch. 40 PVC
FTA-197-MW08	1173947.70	673554.77	819.86	819.64	54.0	15	37 - 52	52 - 54	2" ID Sch. 40 PVC

Monitoring wells installed using hollow-stem auger.
Horizontal coordinates referenced to the U.S. State Plane Coordinate System, Alabama East Zone, North American Datum of 1983 (NAD83).
Elevations referenced to the North American Vertical Datum of 1988 (NAVD88).
2" ID Sch. 40 PVC - 2-inch inside diameter, Schedule 40, polyvinyl chloride.
bgs - Below ground surface.
ft - Feet.
msl - Mean sea level.
NA - Not applicable.
TOC - Top of casing.

Upon reaching the target depth, a 5- to 20-foot length of 2-inch ID, 0.010-inch factory slotted, Schedule 40 polyvinyl chloride (PVC) screen with a 3-inch PVC end cap (or a 1- or 2-foot PVC sump) was placed through the auger to the bottom of the borehole (Table 3-3). The screen and end cap or sump were attached to 2-inch ID, flush-threaded Schedule 40 PVC riser. A filter pack of number 1 filter sand (environmentally safe, clean fine sand, sieve size 20 to 40) was tremied around the well screen to approximately 2 feet above the top of the well screen as the augers were removed. The wells were surged approximately 10 minutes using a solid PVC surge block, or until no more settling of the filter sand occurred inside the borehole. A bentonite seal consisting of approximately 2 feet of bentonite chips was placed immediately on top of the filter sand and hydrated with potable water. If the bentonite seal was installed below the water table surface, the bentonite chips were allowed to hydrate in the groundwater. The bentonite seal placement and hydration followed procedures in Appendix C of the SAP (IT, 2000a). A locking well cap was placed on the PVC well casing. The monitoring well surface completion included placing a protective casing over the monitoring well and installing a concrete well pad around the well and protective casing. Additionally, four concrete-filled steel protective posts were placed around the well pad.

The monitoring wells were developed by surging and pumping with a 2-inch submersible pump in accordance with methodology outlined in Section 4.8 and Appendix C of the SAP (IT, 2000a). The submersible pump used for well development was moved in an up-and-down fashion to encourage any residual well installation materials to enter the well. These materials were then pumped out of the well in order to re-establish the natural hydraulic flow conditions. Development was performed until the water turbidity was less than or equal to 20 nephelometric turbidity units (NTU), or for a maximum of four hours. The well development logs are included in Appendix C.

3.2.4 Water Level Measurements

The depth to groundwater was measured in all temporary, permanent, and existing monitoring wells installed at FTMC on March 13 and 14, 2000 following procedures outlined in Section 4.18 of the SAP (IT, 2000a). Depth to groundwater was measured with electronic water level meters. The meter probe and cable were cleaned between use at each well following decontamination methodology presented in Section 4.10 of the SAP (IT, 2000a). Measurements were referenced to the top of the PVC casing. A summary of groundwater level measurements for the ASP is presented in Table 3-4.

3.2.5 Groundwater Sampling

Table 3-4

Groundwater Elevations
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Well Location	Date	Depth to Water (ft BTOC)	Top of Casing Elevation (ft msl)	Ground Elevation (ft msl)	Groundwater Elevation (ft msl)
FTA-197-MW01	13-Mar-00	3.77	806.32	806.62	802.55
FTA-197-MW02	13-Mar-00	2.20	782.53	782.76	780.33
FTA-197-MW03	13-Mar-00	8.30	787.32	787.51	779.02
FTA-197-MW04	13-Mar-00	0.75	789.13	789.33	788.38
FTA-197-MW05	13-Mar-00	41.81	934.89	932.41	893.08
FTA-197-MW06	13-Mar-00	3.48	800.88	801.09	797.40
FTA-197-MW07(W)	13-Mar-00	31.68	847.55	847.82	815.87
FTA-197-MW08	13-Mar-00	15.72	819.64	819.86	803.92
GSBP-86-MW02	13-Mar-00	5.43	787.76	788.34	782.33
GSBP-86-MW06	13-Mar-00	2.38	796.09	796.32	793.71
GSBP-86-MW07	13-Mar-00	5.88	792.23	794.78	786.35

Elevations referenced to the North American Vertical Datum of 1988 (NAVD88).

BTOC - Below top of casing.
ft - Feet.
msl - Mean sea level.

Groundwater samples were collected from the eight permanent wells installed at the ASP. The well/groundwater sampling locations are shown on Figure 3-1. The groundwater sampling locations and rationale are listed in Table 3-1. The groundwater sample designations and QA/QC samples are listed in Table 3-5.

Sample Collection. Groundwater sampling was performed following procedures outlined in Section 4.9 of the SAP (IT, 2000a). Groundwater was sampled after purging a minimum of three well volumes and after field parameters (i.e., temperature, pH, specific conductivity, oxidation-reduction potential, and turbidity) stabilized. Purging and sampling were performed with a submersible pump equipped with Teflon™ tubing. Field parameters were measured using a calibrated water quality meter. Field parameter readings are summarized in Table 3-6. Sample collection logs are included in Appendix A. The samples were analyzed for the parameters listed in Table 3-5 using methods outlined in Section 3.4.

3.2.6 Surface Water Sampling

Five surface water samples were collected at the ASP from locations shown on Figure 3-1. The surface water sampling locations and rationale are listed in Table 3-1. The surface water sample designations and QA/QC samples are listed in Table 3-7. The sampling locations were determined in the field, based on drainage pathways and actual field observations.

Sample Collection. Surface water samples were collected in accordance with the procedures specified in Section 4.9.1.3 of the SAP (IT, 2000a). The surface water samples were collected by dipping a clean stainless-steel pitcher in the water, and pouring the water into the appropriate sample containers. Surface water samples were collected after the field parameters described in Section 3.2.5 had been measured using a calibrated water quality meter. The field parameter readings are presented in Table 3-6. Sample collection logs are included in Appendix A. The samples were analyzed for the parameters listed in Table 3-7 using methods outlined in Section 3.4.

3.2.7 Sediment Sampling

Five sediment samples were collected at the same locations as the surface water samples discussed in Section 3.2.6. The sediment sampling locations are shown on Figure 3-1. Sediment sampling locations and rationale are presented in Table 3-1. The sediment sample designations and QA/QC samples are listed in Table 3-7. The sediment sampling locations were determined in the field, based on drainage pathways and actual field observations.

Sample Collection. Sediment sampling was conducted in accordance with the procedures

Table 3-5

Groundwater Sample Designations and QA/QC Samples
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Sample Location	Sample Designation	QA/QC Samples			Analytical Suite
		Field Duplicates	Field Splits	MS/MSD	
FTA-197-MW01	FTA-197-MW01-GW-CA3001-REG	FTA-197-MW01-GW-CA3002-FD	FTA-197-MW01-GW-CA3003-FS		TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-197-MW02	FTA-197-MW02-GW-CA3004-REG				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-197-MW03	FTA-197-MW03-GW-CA3005-REG				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-197-MW04	FTA-197-MW04-GW-CA3006-REG				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-197-MW05	FTA-197-MW05-GW-CA3007-REG				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-197-MW06	FTA-197-MW06-GW-CA3008-REG				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-197-MW07(W)	FTA-197-MW07-GW-CA3009-REG				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-197-MW08	FTA-197-MW08-GW-CA3010-REG			FTA-197-MW02-GW-CA3004-MS FTA-197-MW02-GW-CA3004-MSD	TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives

Groundwater samples were collected from the approximate midpoint of the saturated screened interval of the monitoring well.

FD - Field duplicate.
FS - Field split.
MS/MSD - Matrix spike/matrix spike duplicate.
PCB- Polychlorinated biphenyls
QA/QC - Quality assurance/quality control.
REG - Field sample.
SVOC - Semivolatile organic compound.
TAL - Target analyte list.
TCL - Target compound list.
VOC - Volatile organic compound.

Table 3-6

Groundwater and Surface Water Field Parameters
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Sample Location	Sample Date	Media	Specific Conductivity[a] (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Temperature (^{o}C)	Turbidity (NTUs)	pH (SU)
FTA-197-MW01	11-May-00	GW	0.316	1.05	150	21.7	166	6.98
FTA-197-MW02	17-May-00	GW	0.848	0.93	15	22.0	6.01	6.70
FTA-197-MW03	17-May-00	GW	2.32	0.59	110	19.3	24.3	6.65
FTA-197-MW04	16-May-00	GW	2.83	0.38	85	20.5	18.2	6.56
FTA-197-MW05	10-May-00	GW	0.021	5.66	335	17.9	5.83	4.76
FTA-197-MW06	10-May-00	GW	0.97	0.26	75	18.9	4.17	6.65
FTA-197-MW07(W)	14-Jun-00	GW	0.43	0.81	50	22.1	7.94	7.34
FTA-197-MW08	16-May-00	GW	0.492	0.11	-65	19.0	11.2	6.88
FTA-197-SW/SD01	24-Jan-00	SW	0.038	8.59	NR	8.7	2.79	6.11
FTA-197-SW/SD02	24-Jan-00	SW	0.043	8.29	NR	8.3	3.93	5.83
FTA-197-SW/SD05	25-Jan-00	SW	0.128	10.8	NR	5.2	22.0	6.07
FTA-197-SW/SD06	24-Jan-00	SW	0.115	7.33	NR	7.0	46.2	5.17
FTA-197-SW/SD07	24-Jan-00	SW	0.135	8.71	NR	7.0	31.0	6.00

[a]Specific conductivity values standardized to millisiemens per centimeter.

^{o}C - Degrees Celsius.
GW - Groundwater.
mg/L - milligrams per liter.
mS/cm - millisiemens per centimeter.
mV - Millivolts.
NR - Reading not recorded.
NTUs - Nephelometric turbidity units.
ORP - Oxidation-reduction potential.
SU - Standard units.
SW - Surface water.

Table 3-7

Surface Water and Sediment Sample Designations and QA/QC Samples
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Sample Location	Sample Designation	Sample Matrix	Sample Depth (ft)	QA/QC Samples			Analytical Suite
				Field Duplicates	Field Splits	MS/MSD	
FTA-197-SW/SD01	FTA-197-SW/SD01-SW-CA2001-REG	Surface Water	N/A				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives (TOC, Grain Size for sediment only)
	FTA-197-SW/SD01-SD-CA1001-REG	Sediment	0-0.5				
FTA-197-SW/SD02	FTA-197-SW/SD02-SW-CA2002-REG	Surface Water	N/A				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives (TOC, Grain Size for sediment only)
	FTA-197-SW/SD02-SD-CA1002-REG	Sediment	0-0.5				
FTA-197-SW/SD05	FTA-197-SW/SD05-SW-CA2005-REG	Surface Water	N/A				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives (TOC, Grain Size for sediment only)
	FTA-197-SW/SD05-SD-CA1005-REG	Sediment	0-0.5	FTA-197-SW/SD05-SD-CA1006-FD	FTA-197-SW/SD05-SD-CA1007-FS		
FTA-197-SW/SD06	FTA-197-SW/SD06-SW-CA2006-REG	Surface Water	N/A				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives (TOC, Grain Size for sediment only)
	FTA-197-SW/SD06-SD-CA1008-REG	Sediment	0-0.5				
FTA-197-SW/SD07	FTA-197-SW/SD07-SW-CA2007-REG	Surface Water	N/A				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives (TOC, Grain Size for sediment only)
	FTA-197-SW/SD07-SD-CA1009-REG	Sediment	0-0.5				

FD - Field duplicate.
FS - Field split.
ft - Feet.
MS/MSD - Matrix spike/matrix spike duplicate.
N/A - Not applicable
PCB- Polychlorinated biphenyls
QA/QC - Quality assurance/quality control.
REG - Field sample.
SVOC - Semivolatile organic compound.
TAL - Target analyte list.
TCL - Target compound list.
TOC - Total organic carbon.
VOC - Volatile organic compound.

specified in Section 4.9.1.2 of the SAP (IT, 2000a). Sediments were collected with a clean stainless-steel spoon and placed in a stainless-steel bowl. Samples for VOC analyses were then immediately collected from the bowl with three EnCore® samplers. The remaining portion of the sample was homogenized and placed in the appropriate sample containers. Sample collection logs are included in Appendix A. The sediment samples were analyzed for the parameters listed in Table 3-7 using methods outlined in Section 3.4.

3.3 Surveying of Sample Locations

Sample locations were surveyed using global positioning system survey techniques and conventional civil survey techniques described in Sections 4.3 and 4.19, respectively, of the SAP (IT, 2000a). Horizontal coordinates were referenced to the U.S. State Plane Coordinate System, Alabama East Zone, North American Datum of 1983. Elevations were referenced to the North American Vertical Datum of 1988. Horizontal coordinates and elevations are included in Appendix D.

3.4 Analytical Program

Samples collected during the SI were analyzed for various physical and chemical parameters. The specific suite of analyses performed was based on the potential site-specific chemicals historically at the site and EPA, ADEM, FTMC, and USACE requirements. Samples collected at the ASP were analyzed for the following parameters:

- Target Compound List VOCs – EPA Method 5035/8260B
- Target Compound List Semivolatile Organic Compounds (SVOC) – EPA Method 8270C
- Target Analyte List Metals – EPA Method 6010B/7000
- Polychlorinated Biphenyls (PCB) – EPA Method 8082
- Chlorinated Pesticides – EPA Method 8081A
- Chlorinated Herbicides –EPA Method 8151A
- Organophosphorus (OP) Pesticides – EPA Method 8141A
- Nitroexplosives – EPA Method 8330
- Total Organic Carbon – EPA Method 9060 (sediment only)
- Grain Size - American Society for Testing and Materials D421/D422 (sediment only).

The samples were analyzed using EPA SW-846 methods, including Update III Methods where applicable, as presented in Table 6-1 in Appendix B of the SAP (IT, 2000a). Data were reported and evaluated in accordance with Corps of Engineers South Atlantic Savannah Level B criteria (USACE, 1994) and the stipulated requirements for the generation of definitive data (Section 3.1.2 of Appendix B of the SAP [IT, 2000a]). Chemical data were reported via hard copy data packages by the laboratory using Contract Laboratory Program-like forms. These packages were validated in accordance with EPA National Functional Guidelines by Level III criteria. A summary of validated data is included in Appendix E. The Data Validation Summary Report is included as Appendix F.

3.5 Sample Preservation, Packaging, and Shipping

Sample preservation, packaging, and shipping followed requirements specified in Section 4.13.2 of the SAP (IT, 2000a). Sample containers, sample volumes, preservatives, and holding times for the analyses required in this SI are listed in Section 5.0, Table 5-1 of Appendix B of the SAP, and sample documentation and chain-of-custody records were recorded as specified in Section 4.13 of the SAP.

Completed analysis request and chain-of-custody records (Appendix A) were secured and included with each shipment of sample coolers to Quanterra Environmental Services in Knoxville, Tennessee. Split samples were shipped to USACE South Atlantic Division Laboratory in Marietta, Georgia.

3.6 Investigation-Derived Waste Management and Disposal

Investigation-derived waste (IDW) was managed and disposed as outlined in Appendix D of the SAP (IT, 2000a). The IDW generated during the SI at the ASP was segregated as follows:

- Drill cuttings
- Purge water from well development and sampling activities, and decontamination fluids
- Personal protective equipment.

Solid IDW was stored inside the fenced area surrounding Buildings 335 and 336 in lined roll-off bins prior to characterization and final disposal. Solid IDW was characterized using toxicity characteristic leaching procedure analyses. Based on the results, drill cuttings and personal protective equipment generated during the SI at the ASP were disposed as nonregulated waste at the Industrial Waste Landfill on the Main Post of FTMC.

Liquid IDW was contained in the existing 20,000-gallon sump associated with the Building T-338 vehicle washrack. Liquid IDW was characterized by VOC, SVOC, and metals analyses. Based on the analyses, liquid IDW was discharged as nonregulated waste to the FTMC wastewater treatment plant on the Main Post.

3.7 Variances/Nonconformances

3.7.1 Variances

Thirteen variances to the SFSP were recorded during completion of the SI at the ASP. The variances did not alter the intent of the investigation or the sampling rationale presented in Table 4-2 of the SFSP (IT, 1999). The variances to the SFSP are summarized in Table 3-8, and are included in Appendix G.

3.7.2 Nonconformances

There were not any nonconformances to the SFSP recorded during completion of the SI at the ASP.

3.8 Data Quality

The field sample analytical data are presented in tabular form in Appendix E. The field samples were collected, documented, handled, analyzed, and reported in a manner consistent with the SI work plan; the FTMC SAP and QAP; and standard, accepted methods and procedures. Sample collection logs pertaining to the collection of these samples were reviewed and organized for this report, and are included in Appendix A. As discussed in Section 3.7, there were 13 variances to the SFSP. However, the variances did not impact the usability of the data.

Data Validation. A complete (100 percent) Level III data validation effort was performed on the reported analytical data. Appendix F consists of a data validation summary report that was prepared to discuss the validation results. Selected results were rejected or otherwise qualified based on the implementation of accepted data validation procedures and practices. These qualified parameters are highlighted in the report. The validation-assigned qualifiers were added to the FTMC IT Environmental Management System™ database for tracking and reporting. The qualified data were used in the comparison to the SSSLs and ESVs. Rejected data (assigned an "R" qualifier) were not used in the comparison to the SSSLs and ESVs.

Table 3-8

Variances to the Site-Specific Field Sampling Plan
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Variance to the SFSP	Justification for Variance	Impact to Site Investigation
Sample location FTA-197-GP05 was relocated approximately 80 feet northwest of the proposed location.	Relocation of the sample location allowed more accurate determination of the presence or absence of soil contamination downgradient of Building 4410.	Relocation of the sample point allowed better determination of the presence or absence of soil contamination.
Sample location FTA-197-GP14 (surface soil sample) was relocated approximately 50 feet northwest of the proposed location. Sample location FTA-197-GP14 (subsurface soil sample) was relocated approximately 65 feet northwest of the proposed sample location and approximately 35 feet west of the surface soil sample location.	Relocation of the surface soil sample allowed the sample to be collected downgradient of Building 4405 and adjacent to a former loading dock. Because of UXO issues, the subsurface soil sample could not be collected from this location and was relocated to still be downgradient of Building 4405.	Relocation of the sample points allowed better determination of the presence or absence of soil contamination.
Sample location FTA-197-GP17 (surface soil sample) was relocated approximately 30 feet northwest of the proposed location. Sample location FTA-197-GP17 (subsurface soil sample) was relocated approximately 45 feet west of the proposed sample location and approximately 40 feet southwest of the surface soil sample location.	Relocation of the surface soil sample allowed the sample to be collected downgradient of Building 4402 and adjacent to a former loading dock. Because of UXO issues, the subsurface soil sample could not be collected from this location and was relocated to still be downgradient of Building 4402.	Relocation of the sample points allowed better determination of the presence or absence of soil contamination.
Sample location FTA-197-GP18 (surface soil sample) was relocated approximately 40 feet northwest of the proposed location. Sample location FTA-197-GP18 (subsurface soil sample) was relocated approximately 50 feet west of the proposed sample location and approximately 35 feet southwest of the surface soil sample location.	Relocation of the surface soil sample allowed the sample to be collected downgradient of Building 4401 and adjacent to a former loading dock. Because of UXO issues, the subsurface soil sample could not be collected from this location and was relocated to still be downgradient of Building 4401.	Relocation of the sample points allowed better determination of the presence or absence of soil contamination.
Sample location FTA-197-GP22 was relocated approximately 70 feet south of the proposed location.	The sample point was relocated adjacent to the entrance to Building 4413 to more accurately determine the presence or absence of soil contamination.	Relocation of the sample point allowed better determination of the presence or absence of soil contamination.
Sample location FTA-197-GP27 was relocated approximately 30 feet southwest of the proposed location.	The sample point was relocated adjacent to the entrance to Building 4423 to more accurately determine the presence or absence of contamination.	Relocation of the sample point allowed better determination of the presence or absence of soil contamination.
Sample location FTA-197-GP28 was relocated approximately 30 feet southwest of the proposed location.	The sample point was relocated adjacent to the entrance to Building 4422 to more accurately determine the presence or absence of contamination.	Relocation of the sample point allowed better determination of the presence or absence of soil contamination.
Sample location FTA-197-MW08 was relocated approximately 50 feet southwest of the proposed location.	The sample point was relocated because of rig access and safety issues.	Relocation of the sample point allowed successful collection of samples for laboratory analysis.

Table 3-8

Variances to the Site-Specific Field Sampling Plan
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Variance to the SFSP	Justification for Variance	Impact to Site Investigation
Depositional soil sample location FTA-197-DEP05 was relocated approximately 150 feet north of the proposed sample location.	The depositional soil sample location was relocated to a topographically lower area where surface runoff would most likely exit the parcel and accumulate.	Relocation of the depositional soil sample point allowed successful sample collection for laboratory analysis and allowed better determination of the presence or absence of contamination.
Proposed surface water and sediment sample FTA-197-SW/SD03 was not collected. Instead, a depositional soil sample was collected at the proposed surface water and sediment sample location.	Surface water and sediment were not present at the proposed location. However, depositional soils were present.	Changing the sample point from a surface water and sediment sample to a depositional soil sample allowed for successful sample collection for laboratory analysis.
Proposed surface water and sediment sample FTA-197-SW/SD04 was not collected. Instead, a depositional soil sample was collected at the proposed surface water and sediment sample location.	Surface water and sediment were not present at the proposed location. However, depositional soils were present.	Changing the sample point from a surface water and sediment sample to a depositional soil sample allowed for successful sample collection for laboratory analysis.
Proposed surface water and sediment sample FTA-197-SW/SD08 was not collected. Instead, a depositional soil sample was collected at the proposed surface water and sediment sample location.	Surface water and sediment were not present at the proposed location. However, depositional soils were present.	Changing the sample point from a surface water and sediment sample to a depositional soil sample allowed for successful sample collection for laboratory analysis.
Permanent monitoring well FTA-197-MW07 was relocated approximately 40 feet southwest of direct-push soil boring location FTA-197-MW07.	The drill rig used to install the permanent monitoring well could not access the same location where the soil boring was advanced.	Relocation of the permanent monitoring well location allowed for successful installation of the monitoring well.

The data presented in this report, except where qualified, meet the principle data quality objective for this SI.

4.0 Site Characterization

Subsurface investigations performed at the ASP provided soil, geologic, and groundwater data. These data were used to characterize the geology and hydrogeology of the site.

4.1 Regional and Site Geology

4.1.1 Regional Geology

Calhoun County includes parts of two physiographic provinces, the Piedmont Upland Province and the Valley and Ridge Province. The Piedmont Upland Province occupies the extreme eastern and southeastern portions of the county and is characterized by metamorphosed sedimentary rocks. The generally accepted range in age of these metamorphics is Cambrian to Devonian.

The majority of Calhoun County, including the Main Post of FTMC, lies within the Appalachian fold and thrust structural belt (Valley and Ridge Province), where southeastward-dipping thrust faults with associated minor folding are the predominant structural features. The fold and thrust belt consists of Paleozoic sedimentary rocks that have been asymmetrically folded and thrust-faulted with major structures and faults striking in a northeast-southwest direction.

Northwestward transport of the Paleozoic rock sequence along the thrust faults has resulted in the imbricate stacking of large slabs of rock referred to as thrust sheets. Within an individual thrust sheet, smaller faults may splay off the larger thrust fault, resulting in imbricate stacking of rock units within an individual thrust sheet (Osborne and Szabo, 1984). Geologic contacts in this region generally strike parallel to the faults; repetition of lithologic units is common in vertical sequences. Geologic formations within the Valley and Ridge Province portion of Calhoun County have been mapped by Warman and Causey (1962), Osborne and Szabo (1984), and Moser and DeJarnette (1992), and vary in age from Lower Cambrian to Pennsylvanian.

The basal unit of the sedimentary sequence in Calhoun County is the Cambrian Chilhowee Group. The Chilhowee Group is comprised of the Cochran, Nichols, Wilson Ridge, and Weisner Formations (Osborne and Szabo, 1984), but in Calhoun County is either undifferentiated or divided into the Cochran and Nichols Formations and an upper undifferentiated Wilson Ridge and Weisner Formation. The Cochran is composed of poorly sorted arkosic sandstone and conglomerate with interbeds of greenish-gray siltstone and mudstone. Massive to laminated, greenish-gray and black mudstone makes up the Nichols Formation with thin interbeds of siltstone and very fine-grained sandstone (Szabo et al., 1988). These two formations are mapped

only in the eastern part of the county.

The Wilson Ridge and Weisner Formations are undifferentiated in Calhoun County and consist of both coarse-grained and fine-grained clastics. The coarse-grained facies appear to dominate the unit and consist primarily of coarse-grained, vitreous quartzite, and friable, fine- to coarse-grained, orthoquartzitic sandstone, both of which locally contain conglomerate. The fine-grained facies consist of sandy and micaceous shale and silty, micaceous mudstone, which are locally interbedded with the coarse clastic rocks. The abundance of orthoquartzitic sandstone and quartzite suggests that most of the Chilhowee Group bedrock in the vicinity of FTMC belongs to the Weisner Formation (Osborne and Szabo, 1984).

The Cambrian Shady Dolomite overlies the Weisner Formation northeast, east, and southwest of the Main Post, and consists of interlayered bluish-gray or pale yellowish-gray sandy dolomitic limestone and siliceous dolomite with coarsely crystalline porous chert (Osborne et al., 1989). A variegated shale and clayey silt have been included within the lower part of the Shady Dolomite (Cloud, 1966). Material similar to this lower shale unit was noted in core holes drilled by the Alabama Geologic Survey on FTMC (Osborne and Szabo, 1984). The character of the Shady Dolomite in the FTMC vicinity and the true assignment of the shale at this stratigraphic interval are still uncertain (Osborne, 1999).

The Rome Formation overlies the Shady Dolomite and locally occurs to the northwest and southeast of the Main Post (as mapped by Warman and Causey [1962] and Osborne and Szabo [1984]) and immediately to the west of Reilly Airfield (Osborne and Szabo, 1984). The Rome Formation consists of variegated thinly interbedded grayish-red-purple mudstone, shale, siltstone, and greenish-red and light gray sandstone, with locally occurring limestone and dolomite. The Conasauga Formation overlies the Rome Formation and occurs along anticlinal axes in the northeastern portion of Pelham Range (Warman and Causey, 1962), (Osborne and Szabo, 1984) and the northern portion of the Main Post (Osborne et al., 1997). The Conasauga Formation is composed of dark-gray, finely to coarsely crystalline medium- to thick-bedded dolomite with minor shale and chert (Osborne et al., 1989).

Overlying the Conasauga Formation is the Knox Group, which is composed of the Copper Ridge and Chepultepec dolomites of Cambro-Ordovician age. The Knox Group is undifferentiated in Calhoun County and consists of light medium gray, fine to medium crystalline, variably bedded to laminated, siliceous dolomite and dolomitic limestone that weathers to a chert residuum (Osborne and Szabo, 1984). The Knox Group underlies a large portion of the Pelham Range

area.

The Ordovician Newala and Little Oak Limestones overlie the Knox Group. The Newala Limestone consists of light to dark gray, micritic, thick-bedded limestone with minor dolomite. The Little Oak Limestone is comprised of dark gray, medium- to thick-bedded, fossiliferous, argillaceous to silty limestone with chert nodules. These limestone units are mapped together as undifferentiated at FTMC and other parts of Calhoun County. The Athens Shale overlies the Ordovician limestone units. The Athens Shale consists of dark-gray to black shale and graptolitic shale with localized interbedded dark gray limestone (Osborne et al., 1989). These units occur within an eroded "window" in the uppermost structural thrust sheet at FTMC and underlie much of the developed area of the Main Post.

Other Ordovician-aged bedrock units mapped in Calhoun County include the Greensport Formation, Colvin Mountain Sandstone, and Sequatchie Formation. These units consist of various siltstones, sandstones, shales, dolomites, and limestones, and are mapped as one, undifferentiated unit in some areas of Calhoun County. The only Silurian-age sedimentary formation mapped in Calhoun County is the Red Mountain Formation. This unit consists of interbedded red sandstone, siltstone, and shale with greenish-gray to red silty and sandy limestone.

The Devonian Frog Mountain Sandstone consists of sandstone and quartzitic sandstone with shale interbeds, dolomudstone, and glauconitic limestone (Szabo et al., 1988). This unit locally occurs in the western portion of Pelham Range.

The Mississippian Fort Payne Chert and the Maury Formation overlie the Frog Mountain Sandstone and are composed of dark- to light-gray limestone with abundant chert nodules and greenish-gray to grayish-red phosphatic shale with increasing amounts of calcareous chert toward the upper portion of the formation (Osborne and Szabo, 1984). These units occur in the northwestern portion of Pelham Range. Overlying the Fort Payne Chert is the Floyd Shale, also of Mississippian age, which consists of thin-bedded, fissile brown to black shale with thin intercalated limestone layers and interbedded sandstone. Osborne and Szabo (1984) reassigned the Floyd Shale, which was mapped by Warman and Causey (1962) on the Main Post of FTMC, to the Ordovician Athens Shale on the basis of fossil data.

The Jacksonville Thrust Fault is the most significant structural geologic feature in the vicinity of FTMC, both for its role in determining the stratigraphic relationships in the area, and for its

contribution to regional water supplies. The trace of the fault extends northeastward for approximately 39 miles between Bynum, Alabama and Piedmont, Alabama. The fault is interpreted as a major splay of the Pell City Fault (Osborne and Szabo, 1984). The Ordovician sequence comprising the Eden thrust sheet is exposed at FTMC through an eroded "window" or "fenster" in the overlying thrust sheet. Rocks within the window display complex folding, with the folds being overturned and tight to isoclinal. The carbonates and shales locally exhibit well-developed cleavage (Osborne and Szabo, 1984). The FTMC window is framed on the northwest by the Rome Formation, on the north by the Conasauga Formation, on the northeast, east, and southwest by the Shady Dolomite, and on the southeast and southwest by the Chilhowee Group (Osborne et al., 1997).

4.1.2 Site Geology

Soils in the western one-third of the ASP fall into the Rarden silty clay loams (ReB3). This mapping unit consists of severely eroded soils that have 2 to 6 percent slopes. These soils generally occur on wide shale ridges with slopes of 2 to 10 percent, and have developed from the residuum of shale and fine-grained, platy sandstone or limestone. Concretions and fragments of sandstone, up to 0.5-inch in diameter, are common on the surface and in the soil. The color of the soils ranges from yellowish red to dark brown. The texture of subsoil ranges from clay to silty clay. These soils are moderately well-drained, strongly acid to very strongly acid (U.S. Department of Agriculture, 1961).

Soils in the eastern two-thirds of the ASP fall into the Montevallo shaly silt loams, 15 to 40 percent slopes (MsE). These shallow and friable soils have developed in residuum on uplands. The color of the soil ranges from yellowish brown to yellowish red, and from very dark grayish-brown and very dark brown to brown or dark brown. Fragments of shale smaller than 2 inches in size are common in the soil. Infiltration is medium, and the capacity for available moisture is low.

The ASP is situated on the eastern boundary of the Ordovician window in the uppermost thrust sheet, with the Jacksonville Fault cutting through the site (Figure 4-1). Bedrock beneath the site is mapped as Mississippian/Ordovician Floyd and Athens shale undifferentiated in the western half of the site. The Cambrian Shady Dolomite underlies the eastern half of the site in an area of high relief (Figure 4-1).

A geologic cross section was constructed using the direct-push and hollow-stem auger boring log data collected during the SI at the ASP, and is presented on Figure 4-2. The geologic cross-section location is shown on Figure 3-1. Based on the cross-section, residuum beneath the ASP

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-GP18					FTA-197-GP19					FTA-197-GP20				
Sample Number					CA0042					CA0044					CA0047				
Sample Date					6-Dec-99					7-Dec-99					7-Dec-99				
Sample Depth (Feet)					0- 1					0- 1					0- 1				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
METALS																			
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	1.56E+04			YES	YES	6.69E+03				YES	1.50E+04			YES	YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	ND					ND					ND				
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	4.49E+01		YES	YES	YES	3.80E+00			YES		3.50E+00			YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	2.49E+01	J				3.30E+01					4.00E+01				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	1.30E+00	J	YES		YES	7.30E-01	J				9.50E-01	J	YES		
Cadmium	mg/kg	2.90E-01	6.25E+00	1.60E+00	ND					ND					ND				
Calcium	mg/kg	1.72E+03	NA	NA	1.58E+03					2.96E+02	J				2.00E+02	J			
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	4.21E+01	J	YES	YES	YES	1.47E+01				YES	2.19E+01				YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	1.46E+01					4.20E+00	J				4.60E+00	J			
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	3.05E+01		YES			1.53E+01	J	YES			3.10E+01	J	YES		
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	7.37E+04		YES	YES	YES	2.77E+04			YES	YES	4.05E+04		YES	YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	2.41E+01	J				1.46E+01					1.73E+01				
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	5.61E+02	J				5.96E+02					3.18E+03		YES		
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	3.81E+02	J		YES	YES	7.99E+01	J				2.43E+01	J			
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	8.90E-02		YES			3.40E-02	B				2.50E-02	B			
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	2.93E+01		YES			7.20E+00					2.07E+01		YES		
Potassium	mg/kg	8.00E+02	NA	NA	3.70E+02	J				3.92E+02	J				4.01E+02	J			
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	ND					ND					ND				
Sodium	mg/kg	6.34E+02	NA	NA	ND					ND					5.16E+01	J			
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	1.20E+00	B		YES	YES	7.70E-01	B		YES		ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	9.72E+01		YES	YES	YES	2.48E+01				YES	3.15E+01				YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	6.98E+01		YES		YES	2.38E+01					5.47E+01		YES		YES
VOLATILE ORGANIC COMPOUNDS																			
1,1,1-Trichloroethane	mg/kg	NA	1.55E+03	1.00E-01	9.40E-04	J				8.30E-04	J				8.30E-04	J			
1,2,4-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND					ND				
1,2-Dimethylbenzene	mg/kg	NA	1.55E+04	5.00E-02	ND					ND					ND				
1,3,5-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND					ND				
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	ND					ND					ND				
Acetone	mg/kg	NA	7.76E+02	2.50E+00	ND					ND					ND				
Cumene	mg/kg	NA	7.77E+02	NA	ND					ND					ND				
Ethylbenzene	mg/kg	NA	7.77E+02	5.00E-02	ND					ND					ND				
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	5.30E-03	B				5.10E-03	B				5.10E-03	B			
Styrene	mg/kg	NA	1.55E+03	1.00E-01	ND					ND					ND				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	ND					ND					ND				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	ND					ND					ND				
m,p-Xylenes	mg/kg	NA	1.55E+04	5.00E-02	ND					ND					ND				
p-Cymene	mg/kg	NA	1.55E+03	NA	ND					ND					ND				

consists of predominantly silt and clay, with some sand lenses overlying weathered shale. The weathered shale was encountered at depths ranging from ground surface to 10.5 feet bgs in the direct-push borings, and at depths ranging from 5 to 99 feet bgs in borings where monitoring wells were installed. Direct-push refusal was encountered at depths ranging from 4 to 12 feet bgs. Competent bedrock was encountered at depths ranging from 14 to 104 feet bgs during drilling.

4.2 Site Hydrogeology

4.2.1 Surface Hydrology

Precipitation in the form of rainfall averages about 54 inches annually in Anniston, Alabama, with infiltration rates annually exceeding evapotranspiration rates. The major surface water features at the Main Post of FTMC include Remount Creek, Cane Creek, and Cave Creek. These waterways flow in a general northwest to westerly direction towards the Coosa River on the western boundary of Calhoun County.

Surface runoff at the ASP likely follows the general topography, flowing to west/northwest towards Cave Creek, and to the south/southwest.

4.2.2 Hydrogeology

Static groundwater levels were measured in monitoring wells installed at the site on March 13, 2000. Table 3-4 summarizes measured groundwater elevations at the ASP. A groundwater elevation map was constructed using the March 2000 data, as shown on Figure 4-3. Groundwater flow at the site is generally to the west/northwest and south/southwest and follows the general site topography. Hydraulic gradients across the site were calculated to be approximately 0.03 feet per foot between FTA-197-MW07 and FTA-197-MW06.

During boring and well installation activities, groundwater was generally encountered in weathered shale, shale or residuum at depths ranging from approximately 2 feet bgs at FTA-197-MW01 to 93 feet bgs at FTA-197-MW05. Static groundwater levels are summarized in Table 3-4 (Appendix B). At FTA-197-MW01, static water levels were 2 feet below the depth where water was encountered during drilling, likely because of the influence of Cave Creek. At the other monitoring wells, the static water levels were above the depth-to-water data from the boring logs, indicating that the groundwater at these wells has an upward hydraulic gradient and is under semiconfined conditions.

5.0 Summary of Analytical Results

The results of the chemical analyses of samples collected at the ASP indicate that metals, VOCs, SVOCs, chlorinated pesticides, and nitroexplosives have been detected in the various site media. PCBs, chlorinated herbicides, and OP pesticides were not detected in any of the samples collected. To evaluate whether the detected constituents present an unacceptable risk to human health and the environment, analytical results were compared to the human health SSSLs and ESVs for FTMC. The SSSLs and ESVs were developed by IT for human health and ecological risk evaluations as part of the ongoing SIs being performed under the BRAC Environmental Restoration Program at FTMC.

Metal concentrations exceeding the SSSLs and ESVs were subsequently compared to metals background screening values (background concentrations) (Science Applications International Corporation [SAIC], 1998) to determine if the metals concentrations are within natural background concentrations. Summary statistics for background metals samples collected at FTMC (SAIC, 1998) are included in Appendix H. Additionally, SVOC concentrations in surface and depositional soils that exceeded the SSSLs and ESVs were compared to PAH background screening values, where available. The PAH background screening values were derived from PAH analytical data from 18 parcels at FTMC that were determined to represent anthropogenic activity (IT, 2000b). PAH background screening values were developed for two categories of surface soils: beneath asphalt and adjacent to asphalt. The PAH background screening values for soils adjacent to asphalt are the more conservative (i.e., lower) of the PAH background values, and are the values used herein for comparison.

Six compounds were quantified by both SW-846 Method 8260B (as VOC) and Method 8270C (as SVOC), including 1,2,4-trichlorobenzene, 1,4-dichlorobenzene, 1,3-dichlorobenzene, 1,2-dichlorobenzene, hexachlorobutadiene, and naphthalene. Method 8260B yields a reporting limit (RL) of 0.005 milligrams per kilogram (mg/kg), while Method 8270C has a RL of 0.330 mg/kg, which is typical for a soil matrix sample. Due to the direct nature of the Method 8260B analysis and its resulting lower RL, this method should be considered superior to Method 8270C when quantifying low levels (0.005 to 0.330 mg/kg) of these compounds. Method 8270C and its associated methylene chloride extraction step is superior, however, when dealing with samples that contain higher concentrations (greater than 0.330 mg/kg) of these compounds. Therefore, all data were considered, and none were categorically excluded. Data validation qualifiers were helpful in evaluating the usability of data, especially if calibration, blank contamination,

precision, or accuracy indicator anomalies were encountered. The validation qualifiers and concentrations reported (e.g., whether concentrations were less than or greater than 0.330 mg/kg) were used to determine which analytical method was likely to return the more accurate result.

The following sections and Tables 5-1 through 5-5 summarize the results of the comparison of detected constituents to the SSSLs, ESVs, and background screening values. Complete analytical results are presented in Appendix E.

5.1 Surface and Depositional Soil Analytical Results

Thirty surface soil samples and ten depositional soil samples were collected for chemical analyses at the ASP. Surface and depositional soil samples were collected from the upper 1 foot of soil at the locations shown on Figure 3-1. Analytical results were compared to residential human health SSSLs, ESVs, and background screening values (metals and PAHs), as presented in Table 5-1.

Metals. Twenty-two metals were detected in surface and depositional soil samples collected at the ASP. Sample locations FTA-197-DEP04, FTA-197-DEP08, and FTA-197-GP23 each contained twenty of the twenty-two detected metals. Three of the beryllium results, one of the cobalt results, one of the copper results, twenty-seven of the mercury results, one of the selenium results, five of the sodium results, and ten of the thallium results were flagged with a "B" data qualifier, signifying that these metals were also detected in an associated laboratory or field blank sample.

The concentrations of seven metals (aluminum, arsenic, chromium, iron, manganese, thallium, and vanadium) exceeded SSSLs. However, with the exception of iron at four locations (FTA-197-GP01, FTA-197-GP07, FTA-197-GP17, and FTA-197-GP18), the detected metals results were below their respective background concentration or within the range of background values determined by SAIC (1998) (Appendix H).

The following metals were detected at concentrations exceeding ESVs and their respective background concentration: aluminum (three locations), arsenic (nine locations), beryllium (twenty locations), chromium (two locations), copper (five locations), iron (twenty-one locations), lead (FTA-197-GP01), manganese (FTA-197-GP01), mercury (FTA-197-DEP08 and FTA-197-DEP09), nickel (six locations), selenium (FTA-197-GP23), vanadium (five locations), and zinc (twenty-five locations). With the exceptions of beryllium (twenty locations), copper

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-DEP01					FTA-197-DEP02					FTA-197-DEP03				
Sample Number					CA0063					CA0064					CA0065				
Sample Date					21-Jan-00					20-Jan-00					20-Jan-00				
Sample Depth (Feet)					0- .5					0- .5					0- .5				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
METALS																			
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	7.42E+03				YES	6.35E+03				YES	7.25E+03				YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	ND					ND					ND				
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	2.90E+00			YES		2.90E+00			YES		4.40E+00			YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	2.17E+01	J				4.06E+01					5.10E+01				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	7.90E-01					5.40E-01	B				8.90E-01		YES		
Cadmium	mg/kg	2.90E-01	6.25E+00	1.60E+00	ND					ND					6.00E-02	J			
Calcium	mg/kg	1.72E+03	NA	NA	2.00E+02	J				6.02E+02	J				6.56E+03	J	YES		
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	1.48E+01				YES	1.23E+01				YES	1.71E+01				YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	3.60E+00	J				5.00E+00	J				1.39E+01				
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	2.63E+01	J	YES			9.60E+00	J				1.83E+01	J	YES		
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	3.33E+04			YES	YES	1.68E+04			YES	YES	2.19E+04			YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	1.20E+01					1.28E+01					1.85E+01				
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	2.38E+03		YES			6.87E+02					3.60E+03		YES		
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	1.08E+02				YES	1.19E+02				YES	6.65E+02			YES	YES
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	3.90E-02	B				5.60E-02	B				4.90E-02	B			
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	1.88E+01		YES			5.80E+00					1.17E+01		YES		
Potassium	mg/kg	8.00E+02	NA	NA	2.41E+02	J				2.88E+02	J				2.89E+02	J			
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	ND					ND					ND				
Sodium	mg/kg	6.34E+02	NA	NA	ND					ND					5.55E+01	J			
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	6.60E-01	B		YES		ND					ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	2.10E+01				YES	1.95E+01				YES	2.21E+01				YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	5.30E+01	J	YES		YES	2.27E+01	J				5.17E+01	J	YES		YES
VOLATILE ORGANIC COMPOUNDS																			
1,1,1-Trichloroethane	mg/kg	NA	1.55E+03	1.00E-01	ND					ND					ND				
1,2,4-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND					ND				
1,2-Dimethylbenzene	mg/kg	NA	1.55E+04	5.00E-02	ND					ND					ND				
1,3,5-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND					ND				
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	ND					ND					ND				
Acetone	mg/kg	NA	7.76E+02	2.50E+00	ND					ND					ND				
Cumene	mg/kg	NA	7.77E+02	NA	ND					ND					ND				
Ethylbenzene	mg/kg	NA	7.77E+02	5.00E-02	ND					ND					ND				
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	2.10E-03	B				4.60E-03	B				2.40E-03	B			
Styrene	mg/kg	NA	1.55E+03	1.00E-01	ND					ND					ND				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	ND					ND					ND				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	1.40E-03	J				5.30E-03	J				1.60E-03	J			
m,p-Xylenes	mg/kg	NA	1.55E+04	5.00E-02	ND					ND					ND				
p-Cymene	mg/kg	NA	1.55E+03	NA	ND					ND					ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-DEP01					FTA-197-DEP02					FTA-197-DEP03				
Sample Number					CA0063					CA0064					CA0065				
Sample Date					21-Jan-00					20-Jan-00					20-Jan-00				
Sample Depth (Feet)					0- .5					0- .5					0- .5				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
SEMIVOLATILE ORGANIC COMPOUNDS																			
Anthracene	mg/kg	9.35E-01	2.33E+03	1.00E-01	ND					ND					ND				
Benzo(a)anthracene	mg/kg	1.19E+00	8.51E-01	5.21E+00	ND					ND					ND				
Benzo(a)pyrene	mg/kg	1.42E+00	8.51E-02	1.00E-01	ND					ND					ND				
Benzo(b)fluoranthene	mg/kg	1.66E+00	8.51E-01	5.98E+01	ND					ND					ND				
Benzo(ghi)perylene	mg/kg	9.55E-01	2.32E+02	1.19E+02	ND					ND					ND				
Benzo(k)fluoranthene	mg/kg	1.45E+00	8.51E+00	1.48E+02	ND					ND					ND				
Butyl benzyl phthalate	mg/kg	NA	1.56E+03	2.40E-01	ND					ND					ND				
Chrysene	mg/kg	1.40E+00	8.61E+01	4.73E+00	ND					ND					ND				
Di-n-butyl phthalate	mg/kg	NA	7.80E+02	2.00E+02	ND					ND					ND				
Fluoranthene	mg/kg	2.03E+00	3.09E+02	1.00E-01	ND					ND					ND				
Indeno(1,2,3-cd)pyrene	mg/kg	9.37E-01	8.51E-01	1.09E+02	ND					ND					ND				
Naphthalene	mg/kg	3.30E-02	1.55E+02	1.00E-01	ND					ND					ND				
Phenanthrene	mg/kg	1.08E+00	2.32E+03	1.00E-01	ND					ND					ND				
Phenol	mg/kg	NA	4.66E+03	5.00E-02	ND					ND					ND				
Pyrene	mg/kg	1.63E+00	2.33E+02	1.00E-01	ND					ND					ND				
bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	8.10E-01					1.10E+00				YES	8.50E-01				
PESTICIDES																			
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	ND					ND					ND				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	ND					ND					ND				
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	ND					ND					3.30E-03	J			YES
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	ND					ND					ND				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	ND					ND					ND				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	ND					ND					ND				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	ND					ND					ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-DEP04					FTA-197-DEP05					FTA-197-DEP06				
Sample Number					CA0067					CA0068					CA0069				
Sample Date					20-Jan-00					20-Jan-00					20-Jan-00				
Sample Depth (Feet)					0- .25					0- .5					0- .5				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
METALS																			
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	2.15E+03				YES	1.11E+04			YES	YES	1.38E+04			YES	YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	ND					ND					ND				
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	7.40E+00			YES		8.10E+00			YES		3.60E+00			YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	8.63E+01					7.01E+01					8.23E+01				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	1.00E-01	B				1.60E+00		YES		YES	1.20E+00		YES		YES
Cadmium	mg/kg	2.90E-01	6.25E+00	1.60E+00	4.20E-01	J	YES			ND					ND				
Calcium	mg/kg	1.72E+03	NA	NA	1.66E+05	J	YES			6.36E+03	J	YES			2.68E+03	J	YES		
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	9.80E+00				YES	1.50E+01				YES	2.00E+01				YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	1.30E+00	B				1.34E+01					1.87E+01		YES		
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	1.39E+01	J	YES			3.21E+01	J	YES			3.52E+01	J	YES		
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	1.26E+04			YES	YES	3.07E+04			YES	YES	3.31E+04			YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	1.41E+01					1.79E+01					1.59E+01				
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	6.54E+04		YES			3.47E+03		YES			6.48E+03		YES		
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	9.24E+01					3.71E+02			YES	YES	3.70E+02			YES	YES
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	3.50E-02	B				6.30E-02	B				4.10E-02	B			
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	3.70E+00	J				2.10E+01		YES			4.72E+01		YES		YES
Potassium	mg/kg	8.00E+02	NA	NA	8.16E+01	J				6.00E+02					3.85E+02	J			
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	5.40E-01	B	YES			ND					ND				
Sodium	mg/kg	6.34E+02	NA	NA	1.16E+02	J				5.54E+01	J				ND				
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					ND					ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	1.92E+01				YES	2.98E+01				YES	2.45E+01				YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	7.48E+01	J	YES		YES	7.32E+01	J	YES		YES	1.04E+02	J	YES		YES
VOLATILE ORGANIC COMPOUNDS																			
1,1,1-Trichloroethane	mg/kg	NA	1.55E+03	1.00E-01	9.20E-04	B				8.70E-04	B				9.60E-04	B			
1,2,4-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND					ND				
1,2-Dimethylbenzene	mg/kg	NA	1.55E+04	5.00E-02	ND					ND					ND				
1,3,5-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND					ND				
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	ND					ND					ND				
Acetone	mg/kg	NA	7.76E+02	2.50E+00	ND					ND					ND				
Cumene	mg/kg	NA	7.77E+02	NA	ND					ND					ND				
Ethylbenzene	mg/kg	NA	7.77E+02	5.00E-02	ND					ND					ND				
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	2.60E-03	B				3.50E-03	B				2.20E-03	B			
Styrene	mg/kg	NA	1.55E+03	1.00E-01	ND					ND					ND				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	ND					ND					ND				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	2.70E-03	J				2.40E-03	J				2.60E-03	J			
m,p-Xylenes	mg/kg	NA	1.55E+04	5.00E-02	ND					ND					ND				
p-Cymene	mg/kg	NA	1.55E+03	NA	ND					ND					ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-DEP04					FTA-197-DEP05					FTA-197-DEP06				
Sample Number					CA0067					CA0068					CA0069				
Sample Date					20-Jan-00					20-Jan-00					20-Jan-00				
Sample Depth (Feet)					0- .25					0- .5					0- .5				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
SEMIVOLATILE ORGANIC COMPOUNDS																			
Anthracene	mg/kg	9.35E-01	2.33E+03	1.00E-01	ND					ND					ND				
Benzo(a)anthracene	mg/kg	1.19E+00	8.51E-01	5.21E+00	ND					ND					ND				
Benzo(a)pyrene	mg/kg	1.42E+00	8.51E-02	1.00E-01	ND					2.90E-02	J				ND				
Benzo(b)fluoranthene	mg/kg	1.66E+00	8.51E-01	5.98E+01	ND					5.00E-02	J				ND				
Benzo(ghi)perylene	mg/kg	9.55E-01	2.32E+02	1.19E+02	ND					ND					ND				
Benzo(k)fluoranthene	mg/kg	1.45E+00	8.51E+00	1.48E+02	ND					ND					ND				
Butyl benzyl phthalate	mg/kg	NA	1.56E+03	2.40E-01	ND					ND					ND				
Chrysene	mg/kg	1.40E+00	8.61E+01	4.73E+00	ND					ND					ND				
Di-n-butyl phthalate	mg/kg	NA	7.80E+02	2.00E+02	ND					ND					ND				
Fluoranthene	mg/kg	2.03E+00	3.09E+02	1.00E-01	ND					ND					ND				
Indeno(1,2,3-cd)pyrene	mg/kg	9.37E-01	8.51E-01	1.09E+02	ND					ND					ND				
Naphthalene	mg/kg	3.30E-02	1.55E+02	1.00E-01	ND					ND					ND				
Phenanthrene	mg/kg	1.08E+00	2.32E+03	1.00E-01	ND					ND					ND				
Phenol	mg/kg	NA	4.66E+03	5.00E-02	ND					ND					ND				
Pyrene	mg/kg	1.63E+00	2.33E+02	1.00E-01	ND					ND					ND				
bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	7.60E-01					6.10E-02	B				6.50E-02	B			
PESTICIDES																			
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	ND					ND					ND				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	ND					ND					ND				
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	ND					ND					ND				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	ND					ND					ND				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	ND					ND					ND				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	ND					ND					ND				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	ND					ND					ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-DEP07					FTA-197-DEP08					FTA-197-DEP09				
Sample Number					CA0070					CA0075					CA0076				
Sample Date					20-Jan-00					21-Jan-00					21-Jan-00				
Sample Depth (Feet)					0- .5					0- .5					0- .5				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
METALS																			
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	1.12E+04			YES	YES	9.31E+03			YES	YES	7.81E+03			YES	YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	ND					6.40E-01	J				ND				
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	6.90E+00			YES		9.60E+00			YES		7.20E+00			YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	2.99E+01					9.03E+01					4.42E+01				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	1.10E+00		YES		YES	1.40E+00		YES		YES	2.80E+00		YES		YES
Cadmium	mg/kg	2.90E-01	6.25E+00	1.60E+00	ND					1.40E-01	J				7.50E-02	J			
Calcium	mg/kg	1.72E+03	NA	NA	8.14E+02	J				2.32E+03	J	YES			3.54E+02	J			
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	2.61E+01			YES	YES	1.40E+01				YES	1.49E+01				YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	8.20E+00					1.50E+01					1.44E+01				
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	3.90E+01	J	YES			1.73E+01	J	YES			1.46E+01	J	YES		
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	5.24E+04		YES	YES	YES	3.67E+04		YES	YES	YES	3.85E+04		YES	YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	2.17E+01					3.73E+01					2.28E+01				
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	2.66E+03		YES			8.31E+02					3.86E+02	J			
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	2.48E+02				YES	1.23E+03			YES	YES	7.42E+02			YES	YES
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	5.10E-02	B				1.00E-01		YES		YES	1.20E-01		YES		YES
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	2.13E+01		YES			1.79E+01		YES			1.65E+01		YES		
Potassium	mg/kg	8.00E+02	NA	NA	3.48E+02	J				3.49E+02	J				2.44E+02	J			
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	ND					ND					ND				
Sodium	mg/kg	6.34E+02	NA	NA	ND					ND					ND				
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					7.80E-01	B		YES		ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	3.60E+01				YES	3.98E+01				YES	4.25E+01				YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	8.57E+01	J	YES		YES	7.22E+01	J	YES		YES	5.25E+01	J	YES		YES
VOLATILE ORGANIC COMPOUNDS																			
1,1,1-Trichloroethane	mg/kg	NA	1.55E+03	1.00E-01	1.00E-03	B				1.40E-03	B				1.10E-03	B			
1,2,4-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND					ND				
1,2-Dimethylbenzene	mg/kg	NA	1.55E+04	5.00E-02	ND					ND					ND				
1,3,5-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND					ND				
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	ND					ND					9.50E-03	J			
Acetone	mg/kg	NA	7.76E+02	2.50E+00	ND					3.90E-02	J				1.20E-01	J			
Cumene	mg/kg	NA	7.77E+02	NA	ND					ND					ND				
Ethylbenzene	mg/kg	NA	7.77E+02	5.00E-02	ND					ND					ND				
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	2.70E-03	B				2.30E-03	B				2.70E-03	B			
Styrene	mg/kg	NA	1.55E+03	1.00E-01	ND					ND					ND				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	ND					ND					ND				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	3.00E-03	J				3.60E-03	J				ND				
m,p-Xylenes	mg/kg	NA	1.55E+04	5.00E-02	ND					ND					ND				
p-Cymene	mg/kg	NA	1.55E+03	NA	ND					5.10E-03	J				1.30E-02				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-DEP07					FTA-197-DEP08					FTA-197-DEP09				
Sample Number					CA0070					CA0075					CA0076				
Sample Date					20-Jan-00					21-Jan-00					21-Jan-00				
Sample Depth (Feet)					0- .5					0- .5					0- .5				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
SEMIVOLATILE ORGANIC COMPOUNDS																			
Anthracene	mg/kg	9.35E-01	2.33E+03	1.00E-01	ND					ND					ND				
Benzo(a)anthracene	mg/kg	1.19E+00	8.51E-01	5.21E+00	ND					ND					ND				
Benzo(a)pyrene	mg/kg	1.42E+00	8.51E-02	1.00E-01	ND					ND					ND				
Benzo(b)fluoranthene	mg/kg	1.66E+00	8.51E-01	5.98E+01	ND					ND					ND				
Benzo(ghi)perylene	mg/kg	9.55E-01	2.32E+02	1.19E+02	ND					ND					ND				
Benzo(k)fluoranthene	mg/kg	1.45E+00	8.51E+00	1.48E+02	ND					ND					ND				
Butyl benzyl phthalate	mg/kg	NA	1.56E+03	2.40E-01	ND					ND					ND				
Chrysene	mg/kg	1.40E+00	8.61E+01	4.73E+00	ND					ND					ND				
Di-n-butyl phthalate	mg/kg	NA	7.80E+02	2.00E+02	ND					ND					ND				
Fluoranthene	mg/kg	2.03E+00	3.09E+02	1.00E-01	ND					ND					ND				
Indeno(1,2,3-cd)pyrene	mg/kg	9.37E-01	8.51E-01	1.09E+02	ND					ND					ND				
Naphthalene	mg/kg	3.30E-02	1.55E+02	1.00E-01	ND					ND					ND				
Phenanthrene	mg/kg	1.08E+00	2.32E+03	1.00E-01	ND					ND					ND				
Phenol	mg/kg	NA	4.66E+03	5.00E-02	ND					ND					ND				
Pyrene	mg/kg	1.63E+00	2.33E+02	1.00E-01	ND					ND					ND				
bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	1.20E+00				YES	8.30E-02	B				9.50E-01				YES
PESTICIDES																			
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	ND					ND					ND				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	ND					ND					ND				
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	ND					ND					ND				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	ND					ND					ND				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	ND					ND					ND				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	ND					ND					ND				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	ND					ND					ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-DEP10					FTA-197-GP01					FTA-197-GP02				
Sample Number					CA0077					CA0001					CA0003				
Sample Date					21-Jan-00					30-Nov-99					1-Dec-99				
Sample Depth (Feet)					0- 0					0- 1					0- 1				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
METALS																			
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	8.92E+03			YES	YES	1.10E+04			YES	YES	8.62E+03			YES	YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	ND					7.60E-01	J				ND				
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	6.10E+00			YES		2.71E+01		YES	YES	YES	2.10E+00			YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	3.54E+01					1.48E+02	J	YES			6.66E+01	J			
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	1.00E+00		YES			2.20E+00	J	YES		YES	5.80E-01	J			
Cadmium	mg/kg	2.90E-01	6.25E+00	1.60E+00	ND					ND					ND				
Calcium	mg/kg	1.72E+03	NA	NA	1.05E+03	J				5.33E+02	J				5.90E+02	J			
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	1.68E+01				YES	1.37E+01	J			YES	9.50E+00	J			YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	8.90E+00					1.92E+01	J	YES			5.80E+00	J			
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	3.26E+01	J	YES			1.89E+01	J	YES			2.90E+00	B			
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	3.80E+04		YES	YES	YES	6.14E+04		YES	YES	YES	1.04E+04			YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	1.91E+01					7.24E+01	J	YES		YES	1.26E+01	J			
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	1.81E+03		YES			8.68E+02					8.64E+02				
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	1.94E+02				YES	1.64E+03	J	YES	YES	YES	2.63E+02	J			YES
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	3.60E-02	B				4.50E-02					4.50E-02				
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	1.90E+01		YES			4.43E+01	J	YES		YES	6.20E+00	J			
Potassium	mg/kg	8.00E+02	NA	NA	4.89E+02	J				9.42E+02	J	YES			3.49E+02	J			
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	ND					ND					ND				
Sodium	mg/kg	6.34E+02	NA	NA	ND					ND					ND				
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					1.40E+00	J		YES	YES	ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	3.04E+01				YES	3.46E+01	J			YES	1.82E+01	J			YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	6.34E+01	J	YES		YES	3.12E+01	J				1.44E+01	J			
VOLATILE ORGANIC COMPOUNDS																			
1,1,1-Trichloroethane	mg/kg	NA	1.55E+03	1.00E-01	9.60E-04	B				ND					ND				
1,2,4-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND					ND				
1,2-Dimethylbenzene	mg/kg	NA	1.55E+04	5.00E-02	ND					ND					ND				
1,3,5-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND					ND				
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	ND					ND					ND				
Acetone	mg/kg	NA	7.76E+02	2.50E+00	ND					ND					ND				
Cumene	mg/kg	NA	7.77E+02	NA	ND					ND					ND				
Ethylbenzene	mg/kg	NA	7.77E+02	5.00E-02	ND					ND					ND				
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	3.10E-03	B				5.40E-03	B				3.80E-03	B			
Styrene	mg/kg	NA	1.55E+03	1.00E-01	ND					ND					ND				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	ND					ND					ND				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	2.70E-03	J				ND					ND				
m,p-Xylenes	mg/kg	NA	1.55E+04	5.00E-02	ND					ND					ND				
p-Cymene	mg/kg	NA	1.55E+03	NA	ND					ND					ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-DEP10					FTA-197-GP01					FTA-197-GP02				
Sample Number					CA0077					CA0001					CA0003				
Sample Date					21-Jan-00					30-Nov-99					1-Dec-99				
Sample Depth (Feet)					0- 0					0- 1					0- 1				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
SEMIVOLATILE ORGANIC COMPOUNDS																			
Anthracene	mg/kg	9.35E-01	2.33E+03	1.00E-01	ND					ND					ND				
Benzo(a)anthracene	mg/kg	1.19E+00	8.51E-01	5.21E+00	ND					ND					ND				
Benzo(a)pyrene	mg/kg	1.42E+00	8.51E-02	1.00E-01	ND					ND					ND				
Benzo(b)fluoranthene	mg/kg	1.66E+00	8.51E-01	5.98E+01	ND					ND					ND				
Benzo(ghi)perylene	mg/kg	9.55E-01	2.32E+02	1.19E+02	ND					ND					ND				
Benzo(k)fluoranthene	mg/kg	1.45E+00	8.51E+00	1.48E+02	ND					ND					ND				
Butyl benzyl phthalate	mg/kg	NA	1.56E+03	2.40E-01	ND					ND					ND				
Chrysene	mg/kg	1.40E+00	8.61E+01	4.73E+00	ND					ND					ND				
Di-n-butyl phthalate	mg/kg	NA	7.80E+02	2.00E+02	ND					ND					ND				
Fluoranthene	mg/kg	2.03E+00	3.09E+02	1.00E-01	ND					ND					ND				
Indeno(1,2,3-cd)pyrene	mg/kg	9.37E-01	8.51E-01	1.09E+02	ND					ND					ND				
Naphthalene	mg/kg	3.30E-02	1.55E+02	1.00E-01	ND					ND					ND				
Phenanthrene	mg/kg	1.08E+00	2.32E+03	1.00E-01	ND					ND					ND				
Phenol	mg/kg	NA	4.66E+03	5.00E-02	ND					ND					ND				
Pyrene	mg/kg	1.63E+00	2.33E+02	1.00E-01	ND					ND					ND				
bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	8.70E-01					6.00E-02	B				7.70E-02	B			
PESTICIDES																			
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	ND					ND					ND				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	ND					ND					ND				
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	ND					ND					ND				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	ND					ND					ND				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	ND					ND					ND				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	ND					ND					ND				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	ND					ND					ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-GP03					FTA-197-GP04					FTA-197-GP05				
Sample Number					CA0007					CA0009					CA0011				
Sample Date					1-Dec-99					1-Dec-99					2-Dec-99				
Sample Depth (Feet)					0- 1					0- 1					0- 1				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
METALS																			
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	1.03E+04			YES	YES	7.63E+03				YES	1.10E+04			YES	YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	5.90E-01	J				ND					6.40E-01	J			
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	8.20E+00			YES		4.40E+00			YES		1.21E+01			YES	YES
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	6.25E+01	J				4.28E+01	J				4.06E+01				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	1.50E+00	J	YES		YES	8.00E-01	J	YES			7.40E-01	J			
Cadmium	mg/kg	2.90E-01	6.25E+00	1.60E+00	ND					ND					ND				
Calcium	mg/kg	1.72E+03	NA	NA	1.78E+03	J	YES			2.20E+03	J	YES			1.01E+03				
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	1.19E+01	J			YES	1.74E+01	J			YES	1.94E+01				YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	1.03E+01	J				7.60E+00	J				5.80E+00	J			
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	2.39E+01	J	YES			8.90E+00	J				1.26E+01				
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	3.84E+04		YES	YES	YES	2.24E+04			YES	YES	3.79E+04		YES	YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	2.95E+01	J				1.33E+01	J				3.23E+01				
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	1.06E+03		YES			5.78E+02	J				8.90E+02				
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	7.48E+02	J		YES	YES	3.27E+02	J			YES	5.16E+02			YES	YES
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	1.90E-02	B				3.40E-02	B				4.00E-02	B			
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	1.78E+01	J	YES			7.10E+00	J				1.02E+01				
Potassium	mg/kg	8.00E+02	NA	NA	8.26E+02	J	YES			4.19E+02	J				3.65E+02	J			
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	ND					ND					ND				
Sodium	mg/kg	6.34E+02	NA	NA	ND					ND					ND				
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					ND					5.40E-01	J		YES	
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	3.76E+01	J			YES	2.62E+01	J			YES	4.62E+01				YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	6.41E+01	J	YES		YES	2.37E+01	J				3.07E+01				
VOLATILE ORGANIC COMPOUNDS																			
1,1,1-Trichloroethane	mg/kg	NA	1.55E+03	1.00E-01	ND					ND					9.50E-04	B			
1,2,4-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND					ND				
1,2-Dimethylbenzene	mg/kg	NA	1.55E+04	5.00E-02	ND					ND					ND				
1,3,5-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND					ND				
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	ND					ND					ND				
Acetone	mg/kg	NA	7.76E+02	2.50E+00	ND					8.00E-02	B				ND				
Cumene	mg/kg	NA	7.77E+02	NA	ND					ND					ND				
Ethylbenzene	mg/kg	NA	7.77E+02	5.00E-02	ND					ND					ND				
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	4.10E-03	B				4.50E-03	B				5.60E-03	B			
Styrene	mg/kg	NA	1.55E+03	1.00E-01	ND					ND					ND				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	ND					ND					ND				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	ND					ND					ND				
m,p-Xylenes	mg/kg	NA	1.55E+04	5.00E-02	ND					ND					ND				
p-Cymene	mg/kg	NA	1.55E+03	NA	ND					ND					ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-GP03					FTA-197-GP04					FTA-197-GP05				
Sample Number					CA0007					CA0009					CA0011				
Sample Date					1-Dec-99					1-Dec-99					2-Dec-99				
Sample Depth (Feet)					0- 1					0- 1					0- 1				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
SEMIVOLATILE ORGANIC COMPOUNDS																			
Anthracene	mg/kg	9.35E-01	2.33E+03	1.00E-01	ND					ND					ND				
Benzo(a)anthracene	mg/kg	1.19E+00	8.51E-01	5.21E+00	ND					ND					ND				
Benzo(a)pyrene	mg/kg	1.42E+00	8.51E-02	1.00E-01	ND					ND					ND				
Benzo(b)fluoranthene	mg/kg	1.66E+00	8.51E-01	5.98E+01	ND					ND					ND				
Benzo(ghi)perylene	mg/kg	9.55E-01	2.32E+02	1.19E+02	ND					ND					ND				
Benzo(k)fluoranthene	mg/kg	1.45E+00	8.51E+00	1.48E+02	ND					ND					ND				
Butyl benzyl phthalate	mg/kg	NA	1.56E+03	2.40E-01	ND					ND					ND				
Chrysene	mg/kg	1.40E+00	8.61E+01	4.73E+00	ND					ND					ND				
Di-n-butyl phthalate	mg/kg	NA	7.80E+02	2.00E+02	ND					ND					ND				
Fluoranthene	mg/kg	2.03E+00	3.09E+02	1.00E-01	ND					ND					ND				
Indeno(1,2,3-cd)pyrene	mg/kg	9.37E-01	8.51E-01	1.09E+02	ND					ND					ND				
Naphthalene	mg/kg	3.30E-02	1.55E+02	1.00E-01	ND					ND					ND				
Phenanthrene	mg/kg	1.08E+00	2.32E+03	1.00E-01	ND					ND					ND				
Phenol	mg/kg	NA	4.66E+03	5.00E-02	ND					ND					ND				
Pyrene	mg/kg	1.63E+00	2.33E+02	1.00E-01	ND					ND					ND				
bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	6.00E-02	B				7.10E-02	B				ND				
PESTICIDES																			
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	ND					ND					ND				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	ND					ND					ND				
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	ND					ND					ND				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	ND					ND					ND				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	ND					ND					ND				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	ND					ND					ND				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	ND					ND					ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-GP06					FTA-197-GP07					FTA-197-GP08				
Sample Number					CA0013					CA0015					CA0017				
Sample Date					1-Dec-99					2-Dec-99					1-Dec-99				
Sample Depth (Feet)					0- 1					0- 1					0- 1				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
METALS																			
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	9.56E+03			YES	YES	1.28E+04			YES	YES	1.34E+04			YES	YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	5.20E-01	J				2.00E+00	J	YES			7.40E-01	J			
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	4.40E+00			YES		1.64E+01		YES	YES	YES	7.80E+00			YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	3.33E+01	J				6.33E+01					5.56E+01	J			
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	6.30E-01	J				1.90E+00	J	YES		YES	1.30E+00	J	YES		YES
Cadmium	mg/kg	2.90E-01	6.25E+00	1.60E+00	ND					ND					ND				
Calcium	mg/kg	1.72E+03	NA	NA	8.03E+03	J	YES			1.55E+03					1.51E+03	J			
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	2.11E+01	J			YES	2.40E+01			YES	YES	1.67E+01	J			YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	3.70E+00	J				1.09E+01	J				1.06E+01	J			
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	1.55E+01	J	YES			6.77E+01		YES		YES	2.95E+01	J	YES		
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	2.90E+04			YES	YES	8.63E+04		YES	YES	YES	3.17E+04			YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	1.23E+01	J				4.49E+01		YES			1.90E+01	J			
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	2.32E+03		YES			3.74E+03		YES			3.70E+03		YES		
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	5.42E+01	J				7.72E+01					2.19E+02	J			YES
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	2.20E-02	B				8.30E-02		YES			4.90E-02				
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	7.90E+00	J				5.72E+01		YES		YES	2.33E+01	J	YES		
Potassium	mg/kg	8.00E+02	NA	NA	4.93E+02	J				7.04E+02					7.08E+02	J			
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	ND					5.30E-01	J	YES			ND				
Sodium	mg/kg	6.34E+02	NA	NA	ND					ND					ND				
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					ND					ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	3.03E+01	J			YES	4.70E+01				YES	3.12E+01	J			YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	2.69E+01	J				1.03E+02		YES		YES	6.70E+01	J	YES		YES
VOLATILE ORGANIC COMPOUNDS																			
1,1,1-Trichloroethane	mg/kg	NA	1.55E+03	1.00E-01	1.00E-03	B				9.10E-04	B				1.20E-03	B			
1,2,4-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	2.50E-03	J				ND					ND				
1,2-Dimethylbenzene	mg/kg	NA	1.55E+04	5.00E-02	1.70E-03	J				ND					ND				
1,3,5-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	7.80E-04	J				ND					ND				
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	ND					ND					ND				
Acetone	mg/kg	NA	7.76E+02	2.50E+00	ND					7.80E-03	J				ND				
Cumene	mg/kg	NA	7.77E+02	NA	ND					ND					ND				
Ethylbenzene	mg/kg	NA	7.77E+02	5.00E-02	8.10E-04	J				ND					ND				
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	3.60E-03	B				5.10E-03	B				4.40E-03	B			
Styrene	mg/kg	NA	1.55E+03	1.00E-01	ND					ND					ND				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	1.70E-03	J				ND					1.10E-03	J			
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	ND					ND					ND				
m,p-Xylenes	mg/kg	NA	1.55E+04	5.00E-02	3.50E-03	J				ND					ND				
p-Cymene	mg/kg	NA	1.55E+03	NA	ND					ND					ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-GP06					FTA-197-GP07					FTA-197-GP08				
Sample Number					CA0013					CA0015					CA0017				
Sample Date					1-Dec-99					2-Dec-99					1-Dec-99				
Sample Depth (Feet)					0- 1					0- 1					0- 1				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
SEMIVOLATILE ORGANIC COMPOUNDS																			
Anthracene	mg/kg	9.35E-01	2.33E+03	1.00E-01	ND					ND					ND				
Benzo(a)anthracene	mg/kg	1.19E+00	8.51E-01	5.21E+00	ND					7.50E-02	J				6.70E-02	J			
Benzo(a)pyrene	mg/kg	1.42E+00	8.51E-02	1.00E-01	ND					5.10E-02	J				6.60E-02	J			
Benzo(b)fluoranthene	mg/kg	1.66E+00	8.51E-01	5.98E+01	ND					6.20E-02	J				1.00E-01	J			
Benzo(ghi)perylene	mg/kg	9.55E-01	2.32E+02	1.19E+02	ND					ND					5.00E-02	J			
Benzo(k)fluoranthene	mg/kg	1.45E+00	8.51E+00	1.48E+02	ND					ND					7.30E-02	J			
Butyl benzyl phthalate	mg/kg	NA	1.56E+03	2.40E-01	ND					ND					ND				
Chrysene	mg/kg	1.40E+00	8.61E+01	4.73E+00	ND					7.30E-02	J				9.80E-02	J			
Di-n-butyl phthalate	mg/kg	NA	7.80E+02	2.00E+02	ND					ND					ND				
Fluoranthene	mg/kg	2.03E+00	3.09E+02	1.00E-01	ND					1.50E-01	J			YES	1.20E-01	J			YES
Indeno(1,2,3-cd)pyrene	mg/kg	9.37E-01	8.51E-01	1.09E+02	ND					ND					4.30E-02	J			
Naphthalene	mg/kg	3.30E-02	1.55E+02	1.00E-01	ND					ND					ND				
Phenanthrene	mg/kg	1.08E+00	2.32E+03	1.00E-01	ND					7.70E-02	J				ND				
Phenol	mg/kg	NA	4.66E+03	5.00E-02	ND					ND					ND				
Pyrene	mg/kg	1.63E+00	2.33E+02	1.00E-01	ND					1.20E-01	J			YES	1.20E-01	J			YES
bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	7.40E-02	B				7.20E-02	J				9.20E-02	B			
PESTICIDES																			
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	ND					ND					ND				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	ND					9.70E-04	J				ND				
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	ND					ND					ND				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	ND					9.50E-04	J				ND				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	ND					ND					ND				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	ND					7.30E-04	J				ND				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	ND					ND					ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-GP09					FTA-197-GP10					FTA-197-GP11				
Sample Number					CA0019					CA0023					CA0025				
Sample Date					2-Dec-99					2-Dec-99					2-Dec-99				
Sample Depth (Feet)					0- 1					0- 1					0- 1				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
METALS																			
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	4.94E+03	J			YES	1.66E+04		YES	YES	YES	1.70E+04		YES	YES	YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	ND					8.10E-01	J				9.60E-01	J			
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	1.60E+00	J		YES		2.03E+01		YES	YES	YES	7.10E+00			YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	1.66E+01	J				4.38E+01					6.21E+01				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	3.00E-01	B				1.30E+00	J	YES		YES	1.50E+00	J	YES		YES
Cadmium	mg/kg	2.90E-01	6.25E+00	1.60E+00	ND					ND					ND				
Calcium	mg/kg	1.72E+03	NA	NA	3.86E+03		YES			1.49E+03					9.79E+02				
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	6.90E+00	J			YES	2.69E+01			YES	YES	2.01E+01				YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	2.00E+00	J				1.15E+01	J				1.30E+01	J			
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	5.30E+00	J				3.42E+01		YES			4.10E+01		YES		YES
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	7.51E+03	J		YES	YES	4.26E+04		YES	YES	YES	3.94E+04		YES	YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	4.10E+00	J				1.97E+01					2.16E+01				
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	2.66E+03	J	YES			2.56E+03		YES			4.87E+03		YES		
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	4.96E+01	J				2.99E+02				YES	2.01E+02				YES
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	1.50E-02	B				3.40E-02	B				3.80E-02	B			
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	4.30E+00	J				2.59E+01		YES			3.01E+01		YES		YES
Potassium	mg/kg	8.00E+02	NA	NA	2.98E+02	J				7.24E+02					1.04E+03		YES		
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	ND					ND					ND				
Sodium	mg/kg	6.34E+02	NA	NA	ND					ND					5.70E+01	J			
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					ND					ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	1.49E+01	J			YES	5.26E+01				YES	3.53E+01				YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	1.37E+01	J				7.45E+01		YES		YES	8.89E+01		YES		YES
VOLATILE ORGANIC COMPOUNDS																			
1,1,1-Trichloroethane	mg/kg	NA	1.55E+03	1.00E-01	1.00E-03	B				9.10E-04	B				9.60E-04	B			
1,2,4-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND					ND				
1,2-Dimethylbenzene	mg/kg	NA	1.55E+04	5.00E-02	ND					ND					ND				
1,3,5-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND					ND				
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	ND					ND					ND				
Acetone	mg/kg	NA	7.76E+02	2.50E+00	ND					1.50E-01					ND				
Cumene	mg/kg	NA	7.77E+02	NA	ND					8.50E-04	J				ND				
Ethylbenzene	mg/kg	NA	7.77E+02	5.00E-02	ND					ND					ND				
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	6.20E-03	B				5.20E-03	B				5.40E-03	B			
Styrene	mg/kg	NA	1.55E+03	1.00E-01	ND					ND					ND				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	ND					ND					ND				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	ND					ND					ND				
m,p-Xylenes	mg/kg	NA	1.55E+04	5.00E-02	ND					ND					ND				
p-Cymene	mg/kg	NA	1.55E+03	NA	ND					1.30E-03	J				ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-GP09					FTA-197-GP10					FTA-197-GP11				
Sample Number					CA0019					CA0023					CA0025				
Sample Date					2-Dec-99					2-Dec-99					2-Dec-99				
Sample Depth (Feet)					0- 1					0- 1					0- 1				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
SEMIVOLATILE ORGANIC COMPOUNDS																			
Anthracene	mg/kg	9.35E-01	2.33E+03	1.00E-01	ND					2.20E-02	J				4.70E-02	J			
Benzo(a)anthracene	mg/kg	1.19E+00	8.51E-01	5.21E+00	ND					ND					ND				
Benzo(a)pyrene	mg/kg	1.42E+00	8.51E-02	1.00E-01	ND					ND					ND				
Benzo(b)fluoranthene	mg/kg	1.66E+00	8.51E-01	5.98E+01	ND					ND					ND				
Benzo(ghi)perylene	mg/kg	9.55E-01	2.32E+02	1.19E+02	ND					ND					ND				
Benzo(k)fluoranthene	mg/kg	1.45E+00	8.51E+00	1.48E+02	ND					ND					ND				
Butyl benzyl phthalate	mg/kg	NA	1.56E+03	2.40E-01	ND					ND					ND				
Chrysene	mg/kg	1.40E+00	8.61E+01	4.73E+00	ND					ND					ND				
Di-n-butyl phthalate	mg/kg	NA	7.80E+02	2.00E+02	ND					ND					ND				
Fluoranthene	mg/kg	2.03E+00	3.09E+02	1.00E-01	ND					3.90E-02	J				4.50E-02	J			
Indeno(1,2,3-cd)pyrene	mg/kg	9.37E-01	8.51E-01	1.09E+02	ND					ND					ND				
Naphthalene	mg/kg	3.30E-02	1.55E+02	1.00E-01	ND					5.30E-02	J	YES			ND				
Phenanthrene	mg/kg	1.08E+00	2.32E+03	1.00E-01	ND					6.70E-02	J				9.70E-02	J			
Phenol	mg/kg	NA	4.66E+03	5.00E-02	ND					3.90E-02	J				ND				
Pyrene	mg/kg	1.63E+00	2.33E+02	1.00E-01	ND					3.60E-02	J				4.70E-02	J			
bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	ND					ND					ND				
PESTICIDES																			
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	ND					ND					ND				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	ND					ND					ND				
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	ND					ND					ND				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	1.00E-03	J				ND					ND				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	ND					ND					ND				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	ND					ND					ND				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	ND					ND					ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-GP12					FTA-197-GP13					FTA-197-GP14				
Sample Number					CA0027					CA0029					CA0033				
Sample Date					2-Dec-99					6-Dec-99					6-Dec-99				
Sample Depth (Feet)					0- 1					0- 1					0- 1				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
METALS																			
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	8.31E+03			YES	YES	4.99E+03				YES	1.90E+04		YES	YES	YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	ND					ND					5.60E-01	J			
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	4.10E+00			YES		1.90E+00			YES		2.83E+01		YES	YES	YES
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	4.24E+01					1.34E+01	J				5.54E+01	J			
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	8.80E-01	J	YES			5.30E-01	J				8.90E-01	J	YES		
Cadmium	mg/kg	2.90E-01	6.25E+00	1.60E+00	ND					ND					ND				
Calcium	mg/kg	1.72E+03	NA	NA	2.24E+04		YES			3.80E+02					2.89E+03		YES		
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	1.19E+01				YES	7.30E+00	J			YES	3.36E+01	J		YES	YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	6.50E+00	J				4.80E+00					1.02E+01				
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	1.94E+01		YES			1.23E+01					2.55E+01		YES		
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	1.84E+04			YES	YES	1.26E+04			YES	YES	4.24E+04		YES	YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	1.21E+01					7.40E+00	J				2.52E+01	J			
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	1.52E+04		YES			1.35E+03		YES			9.26E+02				
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	2.87E+02				YES	8.12E+01	J				4.12E+02	J		YES	YES
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	2.50E-02	B				2.80E-02	B				9.40E-02		YES		
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	1.43E+01		YES			1.24E+01		YES			1.99E+01		YES		
Potassium	mg/kg	8.00E+02	NA	NA	5.87E+02					3.33E+02	J				5.76E+02	J			
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	ND					ND					ND				
Sodium	mg/kg	6.34E+02	NA	NA	5.64E+01	J				ND					ND				
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					ND					8.10E-01	B		YES	
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	2.05E+01				YES	1.33E+01				YES	7.08E+01		YES	YES	YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	4.43E+01		YES			3.38E+01					4.88E+01		YES		
VOLATILE ORGANIC COMPOUNDS																			
1,1,1-Trichloroethane	mg/kg	NA	1.55E+03	1.00E-01	9.10E-04	B				ND					9.20E-04	J			
1,2,4-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND					ND				
1,2-Dimethylbenzene	mg/kg	NA	1.55E+04	5.00E-02	ND					ND					ND				
1,3,5-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND					ND				
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	ND					ND					ND				
Acetone	mg/kg	NA	7.76E+02	2.50E+00	1.80E-02	J				ND					ND				
Cumene	mg/kg	NA	7.77E+02	NA	ND					ND					ND				
Ethylbenzene	mg/kg	NA	7.77E+02	5.00E-02	ND					ND					ND				
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	6.00E-03	B				4.40E-03	B				6.30E-03	B			
Styrene	mg/kg	NA	1.55E+03	1.00E-01	ND					ND					ND				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	ND					ND					ND				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	ND					ND					ND				
m,p-Xylenes	mg/kg	NA	1.55E+04	5.00E-02	ND					ND					ND				
p-Cymene	mg/kg	NA	1.55E+03	NA	ND					ND					ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-GP12					FTA-197-GP13					FTA-197-GP14				
Sample Number					CA0027					CA0029					CA0033				
Sample Date					2-Dec-99					6-Dec-99					6-Dec-99				
Sample Depth (Feet)					0- 1					0- 1					0- 1				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
SEMIVOLATILE ORGANIC COMPOUNDS																			
Anthracene	mg/kg	9.35E-01	2.33E+03	1.00E-01	ND					ND					ND				
Benzo(a)anthracene	mg/kg	1.19E+00	8.51E-01	5.21E+00	ND					ND					4.90E-02	J			
Benzo(a)pyrene	mg/kg	1.42E+00	8.51E-02	1.00E-01	ND					ND					3.30E-02	J			
Benzo(b)fluoranthene	mg/kg	1.66E+00	8.51E-01	5.98E+01	ND					ND					6.80E-02	J			
Benzo(ghi)perylene	mg/kg	9.55E-01	2.32E+02	1.19E+02	ND					ND					ND				
Benzo(k)fluoranthene	mg/kg	1.45E+00	8.51E+00	1.48E+02	ND					ND					6.10E-02	J			
Butyl benzyl phthalate	mg/kg	NA	1.56E+03	2.40E-01	5.10E-02	J				ND					ND				
Chrysene	mg/kg	1.40E+00	8.61E+01	4.73E+00	ND					ND					8.90E-02	J			
Di-n-butyl phthalate	mg/kg	NA	7.80E+02	2.00E+02	ND					ND					ND				
Fluoranthene	mg/kg	2.03E+00	3.09E+02	1.00E-01	ND					ND					9.30E-02	J			
Indeno(1,2,3-cd)pyrene	mg/kg	9.37E-01	8.51E-01	1.09E+02	ND					ND					ND				
Naphthalene	mg/kg	3.30E-02	1.55E+02	1.00E-01	ND					ND					ND				
Phenanthrene	mg/kg	1.08E+00	2.32E+03	1.00E-01	4.40E-02	J				ND					ND				
Phenol	mg/kg	NA	4.66E+03	5.00E-02	ND					ND					ND				
Pyrene	mg/kg	1.63E+00	2.33E+02	1.00E-01	ND					ND					8.40E-02	J			
bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	1.50E-01	J				8.50E-02	B				9.20E-02	B			
PESTICIDES																			
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	ND					ND					ND				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	ND					ND					ND				
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	ND					ND					ND				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	ND					ND					ND				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	ND					ND					ND				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	ND					ND					ND				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	ND					ND					ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-GP15					FTA-197-GP16					FTA-197-GP17				
Sample Number					CA0035					CA0038					CA0040				
Sample Date					3-Dec-99					6-Dec-99					6-Dec-99				
Sample Depth (Feet)					0- 1					0- 1					0- 1				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
METALS																			
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	1.39E+04			YES	YES	1.00E+04			YES	YES	1.49E+04			YES	YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	ND					ND					5.50E-01	J			
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	6.10E+00			YES		3.18E+01		YES	YES	YES	4.62E+01		YES	YES	YES
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	6.01E+01	J				3.03E+01	J				2.94E+01	J			
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	1.30E+00	J	YES		YES	9.10E-01	J	YES			1.50E+00	J	YES		YES
Cadmium	mg/kg	2.90E-01	6.25E+00	1.60E+00	ND					ND					ND				
Calcium	mg/kg	1.72E+03	NA	NA	5.55E+02	J				6.65E+03		YES			4.42E+02	J			
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	1.66E+01	J			YES	2.43E+01	J		YES	YES	4.05E+01	J	YES	YES	YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	7.10E+00					1.10E+01					1.65E+01		YES		
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	3.01E+01		YES			3.13E+01		YES			3.18E+01		YES		
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	3.65E+04		YES	YES	YES	4.09E+04		YES	YES	YES	7.78E+04		YES	YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	2.09E+01	J				2.38E+01	J				2.51E+01	J			
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	3.25E+03		YES			3.60E+03		YES			3.50E+02	J			
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	9.98E+01	J				2.84E+02	J			YES	4.85E+02	J		YES	YES
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	1.40E-02	B				7.00E-02	B				7.20E-02	B			
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	1.87E+01		YES			2.04E+01		YES			3.08E+01		YES		YES
Potassium	mg/kg	8.00E+02	NA	NA	7.67E+02					4.08E+02	J				3.33E+02	J			
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	ND					ND					ND				
Sodium	mg/kg	6.34E+02	NA	NA	2.42E+02	B				7.08E+01	B				ND				
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					5.00E-01	B				7.60E-01	B		YES	
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	3.38E+01				YES	5.36E+01			YES	YES	9.50E+01		YES	YES	YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	6.11E+01		YES		YES	6.48E+01		YES		YES	7.26E+01		YES		YES
VOLATILE ORGANIC COMPOUNDS																			
1,1,1-Trichloroethane	mg/kg	NA	1.55E+03	1.00E-01	ND					7.60E-04	J				ND				
1,2,4-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND					ND				
1,2-Dimethylbenzene	mg/kg	NA	1.55E+04	5.00E-02	ND					ND					ND				
1,3,5-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND					ND				
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	ND					ND					ND				
Acetone	mg/kg	NA	7.76E+02	2.50E+00	ND					ND					9.70E-03	J			
Cumene	mg/kg	NA	7.77E+02	NA	ND					ND					ND				
Ethylbenzene	mg/kg	NA	7.77E+02	5.00E-02	ND					ND					ND				
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	5.10E-03	B				4.10E-03	B				5.90E-03	B			
Styrene	mg/kg	NA	1.55E+03	1.00E-01	ND					ND					ND				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	ND					ND					9.60E-04	B			
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	ND					ND					ND				
m,p-Xylenes	mg/kg	NA	1.55E+04	5.00E-02	ND					ND					ND				
p-Cymene	mg/kg	NA	1.55E+03	NA	ND					ND					ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-GP15					FTA-197-GP16					FTA-197-GP17				
Sample Number					CA0035					CA0038					CA0040				
Sample Date					3-Dec-99					6-Dec-99					6-Dec-99				
Sample Depth (Feet)					0- 1					0- 1					0- 1				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
SEMIVOLATILE ORGANIC COMPOUNDS																			
Anthracene	mg/kg	9.35E-01	2.33E+03	1.00E-01	ND					ND					ND				
Benzo(a)anthracene	mg/kg	1.19E+00	8.51E-01	5.21E+00	ND					ND					ND				
Benzo(a)pyrene	mg/kg	1.42E+00	8.51E-02	1.00E-01	ND					ND					ND				
Benzo(b)fluoranthene	mg/kg	1.66E+00	8.51E-01	5.98E+01	ND					ND					ND				
Benzo(ghi)perylene	mg/kg	9.55E-01	2.32E+02	1.19E+02	ND					ND					ND				
Benzo(k)fluoranthene	mg/kg	1.45E+00	8.51E+00	1.48E+02	ND					ND					ND				
Butyl benzyl phthalate	mg/kg	NA	1.56E+03	2.40E-01	ND					ND					ND				
Chrysene	mg/kg	1.40E+00	8.61E+01	4.73E+00	ND					ND					ND				
Di-n-butyl phthalate	mg/kg	NA	7.80E+02	2.00E+02	1.40E-01	J				ND					ND				
Fluoranthene	mg/kg	2.03E+00	3.09E+02	1.00E-01	ND					ND					ND				
Indeno(1,2,3-cd)pyrene	mg/kg	9.37E-01	8.51E-01	1.09E+02	ND					ND					ND				
Naphthalene	mg/kg	3.30E-02	1.55E+02	1.00E-01	ND					ND					ND				
Phenanthrene	mg/kg	1.08E+00	2.32E+03	1.00E-01	ND					ND					ND				
Phenol	mg/kg	NA	4.66E+03	5.00E-02	ND					ND					ND				
Pyrene	mg/kg	1.63E+00	2.33E+02	1.00E-01	ND					ND					ND				
bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	5.30E-02	J				7.20E-02	B				7.00E-02	B			
PESTICIDES																			
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	ND					ND					ND				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	7.50E-04	J				ND					ND				
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	ND					1.10E-03	J				ND				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	ND					ND					ND				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	ND					ND					ND				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	ND					ND					ND				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	ND					ND					ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-GP18					FTA-197-GP19					FTA-197-GP20				
Sample Number					CA0042					CA0044					CA0047				
Sample Date					6-Dec-99					7-Dec-99					7-Dec-99				
Sample Depth (Feet)					0- 1					0- 1					0- 1				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
SEMIVOLATILE ORGANIC COMPOUNDS																			
Anthracene	mg/kg	9.35E-01	2.33E+03	1.00E-01	ND					ND					ND				
Benzo(a)anthracene	mg/kg	1.19E+00	8.51E-01	5.21E+00	ND					ND					ND				
Benzo(a)pyrene	mg/kg	1.42E+00	8.51E-02	1.00E-01	2.80E-02	J				ND					ND				
Benzo(b)fluoranthene	mg/kg	1.66E+00	8.51E-01	5.98E+01	5.00E-02	J				ND					ND				
Benzo(ghi)perylene	mg/kg	9.55E-01	2.32E+02	1.19E+02	ND					ND					ND				
Benzo(k)fluoranthene	mg/kg	1.45E+00	8.51E+00	1.48E+02	ND					ND					ND				
Butyl benzyl phthalate	mg/kg	NA	1.56E+03	2.40E-01	ND					ND					ND				
Chrysene	mg/kg	1.40E+00	8.61E+01	4.73E+00	4.60E-02	J				ND					ND				
Di-n-butyl phthalate	mg/kg	NA	7.80E+02	2.00E+02	ND					ND					ND				
Fluoranthene	mg/kg	2.03E+00	3.09E+02	1.00E-01	4.40E-02	J				ND					ND				
Indeno(1,2,3-cd)pyrene	mg/kg	9.37E-01	8.51E-01	1.09E+02	ND					ND					ND				
Naphthalene	mg/kg	3.30E-02	1.55E+02	1.00E-01	ND					ND					ND				
Phenanthrene	mg/kg	1.08E+00	2.32E+03	1.00E-01	ND					ND					ND				
Phenol	mg/kg	NA	4.66E+03	5.00E-02	ND					ND					ND				
Pyrene	mg/kg	1.63E+00	2.33E+02	1.00E-01	4.50E-02	J				ND					ND				
bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	8.40E-02	B				ND					4.60E-02	J			
PESTICIDES																			
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	ND					ND					ND				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	ND					7.50E-04	J				ND				
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	ND					ND					ND				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	ND					ND					ND				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	ND					ND					ND				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	ND					ND					ND				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	ND					ND					ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-GP21					FTA-197-GP22					FTA-197-GP23				
Sample Number					CA0049					CA0051					CA0053				
Sample Date					3-Dec-99					2-Dec-99					2-Dec-99				
Sample Depth (Feet)					0- 1					0- 1					0- 1				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
METALS																			
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	9.73E+03			YES	YES	1.26E+04			YES	YES	1.53E+04			YES	YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	ND					5.40E-01	J				1.10E+00	J			
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	7.90E+00			YES		6.00E+00			YES		9.00E+00			YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	3.34E+01	J				5.83E+01					3.97E+01				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	1.80E+00	J	YES		YES	1.50E+00	J	YES		YES	1.20E+00	J	YES		YES
Cadmium	mg/kg	2.90E-01	6.25E+00	1.60E+00	ND					ND					ND				
Calcium	mg/kg	1.72E+03	NA	NA	1.12E+03					9.15E+02					2.03E+02	J			
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	1.73E+01	J			YES	1.68E+01				YES	1.87E+01				YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	8.70E+00					1.68E+01	J	YES			3.40E+00	J			
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	4.23E+01		YES		YES	3.23E+01		YES			5.81E+01		YES		YES
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	4.11E+04		YES	YES	YES	3.45E+04		YES	YES	YES	3.89E+04		YES	YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	1.84E+01	J				1.98E+01					1.96E+01				
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	2.34E+03		YES			2.25E+03		YES			3.63E+03		YES		
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	1.71E+02	J			YES	4.88E+02			YES	YES	4.92E+01				
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	3.80E-02	B				4.50E-02					6.80E-02				
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	2.88E+01		YES			2.43E+01		YES			1.73E+01		YES		
Potassium	mg/kg	8.00E+02	NA	NA	7.07E+02					9.62E+02		YES			1.01E+03		YES		
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	ND					ND					1.00E+00		YES		YES
Sodium	mg/kg	6.34E+02	NA	NA	6.78E+01	B				5.47E+01	J				6.40E+01	J			
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					ND					ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	3.52E+01				YES	3.22E+01				YES	3.43E+01				YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	8.84E+01		YES		YES	7.29E+01		YES		YES	7.42E+01		YES		YES
VOLATILE ORGANIC COMPOUNDS																			
1,1,1-Trichloroethane	mg/kg	NA	1.55E+03	1.00E-01	8.70E-04	J				1.00E-03	B				8.50E-04	J			
1,2,4-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND					ND				
1,2-Dimethylbenzene	mg/kg	NA	1.55E+04	5.00E-02	ND					ND					ND				
1,3,5-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND					ND				
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	ND					ND					ND				
Acetone	mg/kg	NA	7.76E+02	2.50E+00	9.90E-02					ND					ND				
Cumene	mg/kg	NA	7.77E+02	NA	ND					ND					ND				
Ethylbenzene	mg/kg	NA	7.77E+02	5.00E-02	ND					ND					ND				
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	6.20E-03	B				5.80E-03	B				6.30E-03	B			
Styrene	mg/kg	NA	1.55E+03	1.00E-01	ND					ND					ND				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	ND					ND					ND				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	ND					ND					ND				
m,p-Xylenes	mg/kg	NA	1.55E+04	5.00E-02	ND					ND					ND				
p-Cymene	mg/kg	NA	1.55E+03	NA	ND					ND					ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-GP21					FTA-197-GP22					FTA-197-GP23				
Sample Number					CA0049					CA0051					CA0053				
Sample Date					3-Dec-99					2-Dec-99					2-Dec-99				
Sample Depth (Feet)					0- 1					0- 1					0- 1				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
SEMIVOLATILE ORGANIC COMPOUNDS																			
Anthracene	mg/kg	9.35E-01	2.33E+03	1.00E-01	ND					ND					ND				
Benzo(a)anthracene	mg/kg	1.19E+00	8.51E-01	5.21E+00	ND					ND					ND				
Benzo(a)pyrene	mg/kg	1.42E+00	8.51E-02	1.00E-01	ND					ND					ND				
Benzo(b)fluoranthene	mg/kg	1.66E+00	8.51E-01	5.98E+01	ND					ND					ND				
Benzo(ghi)perylene	mg/kg	9.55E-01	2.32E+02	1.19E+02	ND					ND					ND				
Benzo(k)fluoranthene	mg/kg	1.45E+00	8.51E+00	1.48E+02	ND					ND					ND				
Butyl benzyl phthalate	mg/kg	NA	1.56E+03	2.40E-01	ND					ND					ND				
Chrysene	mg/kg	1.40E+00	8.61E+01	4.73E+00	ND					ND					ND				
Di-n-butyl phthalate	mg/kg	NA	7.80E+02	2.00E+02	ND					ND					ND				
Fluoranthene	mg/kg	2.03E+00	3.09E+02	1.00E-01	ND					ND					ND				
Indeno(1,2,3-cd)pyrene	mg/kg	9.37E-01	8.51E-01	1.09E+02	ND					ND					ND				
Naphthalene	mg/kg	3.30E-02	1.55E+02	1.00E-01	ND					ND					ND				
Phenanthrene	mg/kg	1.08E+00	2.32E+03	1.00E-01	ND					ND					ND				
Phenol	mg/kg	NA	4.66E+03	5.00E-02	ND					ND					ND				
Pyrene	mg/kg	1.63E+00	2.33E+02	1.00E-01	ND					ND					ND				
bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	ND					9.10E-02	J				9.60E-02	J			
PESTICIDES																			
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	ND					ND					ND				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	ND					ND					ND				
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	ND					ND					ND				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	ND					ND					ND				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	ND					ND					ND				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	ND					ND					ND				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	ND					1.20E-03	J				ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-GP24					FTA-197-GP25					FTA-197-GP26				
Sample Number					CA0055					CA0057					CA0059				
Sample Date					2-Dec-99					3-Dec-99					3-Dec-99				
Sample Depth (Feet)					0- 1					0- 1					0- 1				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
METALS																			
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	1.01E+04			YES	YES	1.44E+04			YES	YES	6.40E+03				YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	7.50E-01	J				5.90E-01	J				ND				
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	6.10E+00			YES		6.40E+00			YES		9.40E+00			YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	5.52E+01					7.50E+01	J				5.90E+00	J			
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	1.50E+00	J	YES		YES	1.50E+00	J	YES		YES	5.20E-01	J			
Cadmium	mg/kg	2.90E-01	6.25E+00	1.60E+00	ND					ND					ND				
Calcium	mg/kg	1.72E+03	NA	NA	1.04E+03					2.16E+03		YES			9.81E+02				
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	1.23E+01				YES	2.02E+01	J			YES	2.24E+01	J			YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	5.30E+00	J				1.36E+01					2.10E+00	J			
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	3.64E+01		YES			4.67E+01		YES		YES	4.50E+00				
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	2.94E+04			YES	YES	3.89E+04		YES	YES	YES	3.09E+04			YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	1.80E+01					2.19E+01	J				7.20E+00	J			
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	1.49E+03		YES			6.68E+03		YES			7.02E+02				
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	7.90E+01					1.76E+02	J			YES	4.92E+01	J			
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	3.90E-02	B				4.70E-02	B				6.60E-02				
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	1.56E+01		YES			3.39E+01		YES		YES	8.60E+00				
Potassium	mg/kg	8.00E+02	NA	NA	9.17E+02		YES			7.72E+02					1.39E+02	J			
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	ND					ND					ND				
Sodium	mg/kg	6.34E+02	NA	NA	ND					1.80E+02	B				6.63E+01	B			
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					ND					ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	2.95E+01				YES	3.18E+01				YES	4.82E+01				YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	6.21E+01		YES		YES	1.05E+02		YES		YES	1.09E+01				
VOLATILE ORGANIC COMPOUNDS																			
1,1,1-Trichloroethane	mg/kg	NA	1.55E+03	1.00E-01	8.50E-04	J				7.40E-04	J				7.30E-04	J			
1,2,4-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND					ND				
1,2-Dimethylbenzene	mg/kg	NA	1.55E+04	5.00E-02	ND					ND					ND				
1,3,5-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND					ND				
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	ND					ND					ND				
Acetone	mg/kg	NA	7.76E+02	2.50E+00	2.90E-01					1.80E-01					ND				
Cumene	mg/kg	NA	7.77E+02	NA	ND					ND					ND				
Ethylbenzene	mg/kg	NA	7.77E+02	5.00E-02	ND					ND					ND				
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	6.10E-03	B				4.30E-03	B				5.30E-03	B			
Styrene	mg/kg	NA	1.55E+03	1.00E-01	ND					ND					ND				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	ND					ND					ND				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	ND					ND					4.90E-03	J			
m,p-Xylenes	mg/kg	NA	1.55E+04	5.00E-02	ND					ND					ND				
p-Cymene	mg/kg	NA	1.55E+03	NA	ND					ND					ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-GP24					FTA-197-GP25					FTA-197-GP26				
Sample Number					CA0055					CA0057					CA0059				
Sample Date					2-Dec-99					3-Dec-99					3-Dec-99				
Sample Depth (Feet)					0- 1					0- 1					0- 1				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
SEMIVOLATILE ORGANIC COMPOUNDS																			
Anthracene	mg/kg	9.35E-01	2.33E+03	1.00E-01	ND					ND					ND				
Benzo(a)anthracene	mg/kg	1.19E+00	8.51E-01	5.21E+00	4.10E-02	J				ND					ND				
Benzo(a)pyrene	mg/kg	1.42E+00	8.51E-02	1.00E-01	4.30E-02	J				ND					ND				
Benzo(b)fluoranthene	mg/kg	1.66E+00	8.51E-01	5.98E+01	7.00E-02	J				ND					ND				
Benzo(ghi)perylene	mg/kg	9.55E-01	2.32E+02	1.19E+02	ND					ND					ND				
Benzo(k)fluoranthene	mg/kg	1.45E+00	8.51E+00	1.48E+02	4.20E-02	J				ND					ND				
Butyl benzyl phthalate	mg/kg	NA	1.56E+03	2.40E-01	ND					ND					ND				
Chrysene	mg/kg	1.40E+00	8.61E+01	4.73E+00	6.30E-02	J				ND					ND				
Di-n-butyl phthalate	mg/kg	NA	7.80E+02	2.00E+02	ND					ND					7.40E-02	J			
Fluoranthene	mg/kg	2.03E+00	3.09E+02	1.00E-01	8.70E-02	J				ND					ND				
Indeno(1,2,3-cd)pyrene	mg/kg	9.37E-01	8.51E-01	1.09E+02	ND					ND					ND				
Naphthalene	mg/kg	3.30E-02	1.55E+02	1.00E-01	ND					ND					ND				
Phenanthrene	mg/kg	1.08E+00	2.32E+03	1.00E-01	ND					ND					ND				
Phenol	mg/kg	NA	4.66E+03	5.00E-02	ND					ND					ND				
Pyrene	mg/kg	1.63E+00	2.33E+02	1.00E-01	7.20E-02	J				ND					ND				
bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	6.90E-02	J				4.20E-02	J				4.50E-02	J			
PESTICIDES																			
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	1.20E-03	J				ND					ND				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	3.50E-03	J			YES	7.00E-04	J				ND				
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	ND					ND					ND				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	1.10E-03	J				ND					ND				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	ND					ND					ND				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	7.10E-04	J				ND					ND				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	ND					ND					ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197				
Sample Location					FTA-197-GP27					FTA-197-GP28				
Sample Number					CA0061					CA0062				
Sample Date					7-Dec-99					7-Dec-99				
Sample Depth (Feet)					0- 1					0- 1				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
METALS														
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	9.54E+03			YES	YES	1.26E+04			YES	YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	5.50E-01	J				ND				
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	2.21E+01		YES	YES	YES	1.76E+01		YES	YES	YES
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	2.56E+01					4.65E+01				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	5.30E-01	J				5.40E-01	J			
Cadmium	mg/kg	2.90E-01	6.25E+00	1.60E+00	ND					ND				
Calcium	mg/kg	1.72E+03	NA	NA	1.14E+04	J	YES			3.42E+03	J	YES		
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	3.17E+01			YES	YES	3.46E+01			YES	YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	6.00E+00	J				6.40E+00	J			
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	1.33E+01	J	YES			1.04E+01	J			
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	3.63E+04		YES	YES	YES	3.26E+04			YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	2.04E+01					2.20E+01				
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	1.45E+03		YES			6.92E+02				
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	3.22E+02	J			YES	3.46E+02	J			YES
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	8.70E-02		YES			5.70E-02				
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	9.20E+00					9.30E+00				
Potassium	mg/kg	8.00E+02	NA	NA	2.09E+02	J				2.80E+02	J			
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	ND					ND				
Sodium	mg/kg	6.34E+02	NA	NA	ND					ND				
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	7.30E-01	B		YES		7.70E-01	B		YES	
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	6.52E+01		YES	YES	YES	5.91E+01		YES	YES	YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	2.14E+01					1.78E+01				
VOLATILE ORGANIC COMPOUNDS														
1,1,1-Trichloroethane	mg/kg	NA	1.55E+03	1.00E-01	8.70E-04	J				ND				
1,2,4-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND				
1,2-Dimethylbenzene	mg/kg	NA	1.55E+04	5.00E-02	ND					ND				
1,3,5-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND				
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	ND					ND				
Acetone	mg/kg	NA	7.76E+02	2.50E+00	1.20E-01					4.30E-02				
Cumene	mg/kg	NA	7.77E+02	NA	ND					ND				
Ethylbenzene	mg/kg	NA	7.77E+02	5.00E-02	ND					ND				
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	5.60E-03	B				4.40E-03	B			
Styrene	mg/kg	NA	1.55E+03	1.00E-01	ND					ND				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	ND					ND				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	ND					ND				
m,p-Xylenes	mg/kg	NA	1.55E+04	5.00E-02	ND					ND				
p-Cymene	mg/kg	NA	1.55E+03	NA	ND					ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197				
Sample Location					FTA-197-GP27					FTA-197-GP28				
Sample Number					CA0061					CA0062				
Sample Date					7-Dec-99					7-Dec-99				
Sample Depth (Feet)					0- 1					0- 1				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
SEMIVOLATILE ORGANIC COMPOUNDS														
Anthracene	mg/kg	9.35E-01	2.33E+03	1.00E-01	ND					ND				
Benzo(a)anthracene	mg/kg	1.19E+00	8.51E-01	5.21E+00	ND					ND				
Benzo(a)pyrene	mg/kg	1.42E+00	8.51E-02	1.00E-01	ND					ND				
Benzo(b)fluoranthene	mg/kg	1.66E+00	8.51E-01	5.98E+01	ND					ND				
Benzo(ghi)perylene	mg/kg	9.55E-01	2.32E+02	1.19E+02	ND					ND				
Benzo(k)fluoranthene	mg/kg	1.45E+00	8.51E+00	1.48E+02	ND					ND				
Butyl benzyl phthalate	mg/kg	NA	1.56E+03	2.40E-01	ND					ND				
Chrysene	mg/kg	1.40E+00	8.61E+01	4.73E+00	ND					ND				
Di-n-butyl phthalate	mg/kg	NA	7.80E+02	2.00E+02	ND					ND				
Fluoranthene	mg/kg	2.03E+00	3.09E+02	1.00E-01	ND					ND				
Indeno(1,2,3-cd)pyrene	mg/kg	9.37E-01	8.51E-01	1.09E+02	ND					ND				
Naphthalene	mg/kg	3.30E-02	1.55E+02	1.00E-01	ND					ND				
Phenanthrene	mg/kg	1.08E+00	2.32E+03	1.00E-01	ND					ND				
Phenol	mg/kg	NA	4.66E+03	5.00E-02	ND					ND				
Pyrene	mg/kg	1.63E+00	2.33E+02	1.00E-01	ND					ND				
bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	5.30E-02	J				4.50E-02	J			
PESTICIDES														
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	ND					ND				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	ND					ND				
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	ND					ND				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	ND					ND				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	ND					ND				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	ND					ND				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	ND					ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197				
Sample Location					FTA-197-MW07					FTA-197-MW08				
Sample Number					CA0071					CA0073				
Sample Date					7-Dec-99					7-Dec-99				
Sample Depth (Feet)					0- 1					0- 1				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
METALS														
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	6.77E+03				YES	9.48E+03			YES	YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	ND					ND				
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	3.00E+00			YES		2.90E+00			YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	3.99E+01					6.18E+01				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	7.60E-01	J				1.20E+00	J	YES		YES
Cadmium	mg/kg	2.90E-01	6.25E+00	1.60E+00	ND					ND				
Calcium	mg/kg	1.72E+03	NA	NA	3.45E+03	J	YES			1.99E+03	J	YES		
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	1.20E+01				YES	1.37E+01				YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	4.40E+00	J				1.16E+01	J			
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	1.28E+01	J	YES			2.13E+01	J	YES		
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	2.17E+04			YES	YES	2.48E+04			YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	1.10E+01					1.32E+01				
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	1.34E+03		YES			3.65E+03		YES		
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	1.47E+02	J			YES	1.21E+02	J			YES
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	4.70E-02	B				3.30E-02	B			
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	9.10E+00					2.21E+01		YES		
Potassium	mg/kg	8.00E+02	NA	NA	3.23E+02	J				3.19E+02	J			
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	ND					ND				
Sodium	mg/kg	6.34E+02	NA	NA	5.78E+01	J				ND				
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					6.30E-01	B		YES	
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	2.17E+01				YES	2.20E+01				YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	2.51E+01					5.11E+01		YES		YES
VOLATILE ORGANIC COMPOUNDS														
1,1,1-Trichloroethane	mg/kg	NA	1.55E+03	1.00E-01	ND					ND				
1,2,4-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND				
1,2-Dimethylbenzene	mg/kg	NA	1.55E+04	5.00E-02	ND					ND				
1,3,5-Trimethylbenzene	mg/kg	NA	3.88E+02	1.00E-01	ND					ND				
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	6.60E-03	J				ND				
Acetone	mg/kg	NA	7.76E+02	2.50E+00	1.20E-01					ND				
Cumene	mg/kg	NA	7.77E+02	NA	ND					ND				
Ethylbenzene	mg/kg	NA	7.77E+02	5.00E-02	ND					ND				
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	5.80E-03	B				5.30E-03	B			
Styrene	mg/kg	NA	1.55E+03	1.00E-01	9.30E-04	J				ND				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	ND					ND				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	ND					2.50E-03	J			
m,p-Xylenes	mg/kg	NA	1.55E+04	5.00E-02	ND					ND				
p-Cymene	mg/kg	NA	1.55E+03	NA	8.00E-03	J				ND				

Table 5-1

Surface and Depositional Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197				
Sample Location					FTA-197-MW07					FTA-197-MW08				
Sample Number					CA0071					CA0073				
Sample Date					7-Dec-99					7-Dec-99				
Sample Depth (Feet)					0- 1					0- 1				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
SEMIVOLATILE ORGANIC COMPOUNDS														
Anthracene	mg/kg	9.35E-01	2.33E+03	1.00E-01	ND					ND				
Benzo(a)anthracene	mg/kg	1.19E+00	8.51E-01	5.21E+00	ND					ND				
Benzo(a)pyrene	mg/kg	1.42E+00	8.51E-02	1.00E-01	ND					ND				
Benzo(b)fluoranthene	mg/kg	1.66E+00	8.51E-01	5.98E+01	ND					ND				
Benzo(ghi)perylene	mg/kg	9.55E-01	2.32E+02	1.19E+02	ND					ND				
Benzo(k)fluoranthene	mg/kg	1.45E+00	8.51E+00	1.48E+02	ND					ND				
Butyl benzyl phthalate	mg/kg	NA	1.56E+03	2.40E-01	ND					ND				
Chrysene	mg/kg	1.40E+00	8.61E+01	4.73E+00	ND					ND				
Di-n-butyl phthalate	mg/kg	NA	7.80E+02	2.00E+02	ND					ND				
Fluoranthene	mg/kg	2.03E+00	3.09E+02	1.00E-01	ND					ND				
Indeno(1,2,3-cd)pyrene	mg/kg	9.37E-01	8.51E-01	1.09E+02	ND					ND				
Naphthalene	mg/kg	3.30E-02	1.55E+02	1.00E-01	ND					ND				
Phenanthrene	mg/kg	1.08E+00	2.32E+03	1.00E-01	ND					ND				
Phenol	mg/kg	NA	4.66E+03	5.00E-02	ND					ND				
Pyrene	mg/kg	1.63E+00	2.33E+02	1.00E-01	ND					ND				
bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	4.50E-02	J				5.20E-02	J			
PESTICIDES														
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	ND					ND				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	ND					ND				
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	ND					3.30E-03	J			YES
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	ND					ND				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	1.70E-03	J				ND				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	1.30E-03	J			YES	ND				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	ND					ND				

Analyses performed by Quanterra Environmental Services using U.S. Environmental Protection Agency (EPA) SW-846 analytical methods, including Update III methods where applicable.

[a] Bkg - Background. Concentration listed is two times (2x) the arithmetic mean of background metals concentration given in Science Applications International Corporation (1998), *Final Background Metals Survey Report, Fort McClellan, Alabama,* July. For SVOCs, value listed is the background screening value for soils adjacent to asphalt as given in IT Corporation (2000), *Final Human Health and Ecological Screening Values and PAH Background Summary Report, Fort McClellan, Calhoun County, Alabama,* July.

[b] Residential human health site-specific screening level (SSSL) and ecological screening value (ESV) as given in IT Corporation (2000), *Final Human Health and Ecological Screening Values and PAH Background Summary Report, Fort McClellan, Calhoun County, Alabama,* July.

B - Analyte detected in laboratory or field blank at concentration greater than the reporting limit (and greater than zero).

J - Result is greater than method detection limit but less than or equal to reporting limit.

mg/kg - Milligrams per kilogram.

NA - Not available.

ND - Not detected.

NR - Analysis not requested.

Qual - Data validation qualifier.

Table 5-2

Subsurface Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel				FTA-197				FTA-197				FTA-197				FTA-197			
Sample Location				FTA-197-GP01				FTA-197-GP02				FTA-197-GP03				FTA-197-GP04			
Sample Number				CA0002				CA0004				CA0008				CA0010			
Sample Date				30-Nov-99				1-Dec-99				1-Dec-99				1-Dec-99			
Sample Depth (Feet)				8-10				6-9				10-12				10-12			
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**
METALS																			
Aluminum	mg/kg	1.36E+04	7.80E+03	1.06E+04			YES	1.01E+04			YES	9.78E+03			YES	7.68E+03			
Antimony	mg/kg	1.31E+00	3.11E+00	ND				1.40E+00	J	YES		ND				9.70E-01	J		
Arsenic	mg/kg	1.83E+01	4.26E-01	4.41E+01		YES	YES	4.34E+01		YES	YES	1.30E+01			YES	3.73E+01		YES	YES
Barium	mg/kg	2.34E+02	5.47E+02	3.76E+03	J	YES	YES	4.30E+02	J	YES		2.09E+02	J			2.09E+02	J		
Beryllium	mg/kg	8.60E-01	9.60E+00	1.55E+01	J	YES	YES	9.90E+00	J	YES	YES	5.30E+00	J	YES		6.60E+00	J	YES	
Cadmium	mg/kg	2.20E-01	6.25E+00	ND				ND				ND				ND			
Calcium	mg/kg	6.37E+02	NA	6.74E+02	J	YES		1.44E+04	J	YES		7.53E+02	J	YES		4.34E+02	J		
Chromium	mg/kg	3.83E+01	2.32E+01	1.42E+01	J			2.78E+01	J		YES	1.03E+01	J			9.90E+00	J		
Cobalt	mg/kg	1.75E+01	4.68E+02	1.24E+02	J	YES		3.50E+01	J	YES		3.36E+01	J	YES		3.70E+01	J	YES	
Copper	mg/kg	1.94E+01	3.13E+02	3.31E+01	J	YES		3.99E+01	J	YES		2.13E+01	J	YES		2.89E+01	J	YES	
Iron	mg/kg	4.48E+04	2.34E+03	1.92E+05		YES	YES	1.74E+05		YES	YES	1.05E+05		YES	YES	1.76E+05		YES	YES
Lead	mg/kg	3.85E+01	4.00E+02	9.39E+01	J	YES		1.03E+02	J	YES		4.31E+01	J	YES		7.58E+01	J	YES	
Magnesium	mg/kg	7.66E+02	NA	1.07E+03		YES		8.59E+03	J	YES		9.95E+02		YES		9.12E+02		YES	
Manganese	mg/kg	1.36E+03	3.63E+02	2.89E+04	J	YES	YES	7.92E+03	J	YES	YES	1.10E+04	J	YES	YES	1.08E+04	J	YES	YES
Mercury	mg/kg	7.00E-02	2.33E+00	8.00E-02		YES		1.40E-01		YES		1.10E-01		YES		1.60E-01		YES	
Nickel	mg/kg	1.29E+01	1.54E+02	1.33E+02	J	YES		7.74E+01	J	YES		4.28E+01	J	YES		5.79E+01	J	YES	
Potassium	mg/kg	7.11E+02	NA	1.17E+03	J	YES		1.17E+03	J	YES		8.64E+02	J	YES		5.73E+02	J		
Silver	mg/kg	2.40E-01	3.91E+01	3.10E-01	J	YES		ND				ND				ND			
Sodium	mg/kg	7.02E+02	NA	ND				ND				ND				ND			
Thallium	mg/kg	1.40E+00	5.08E-01	ND				2.30E+00	J	YES	YES	2.00E+00	J	YES	YES	3.40E+00	J	YES	YES
Vanadium	mg/kg	6.49E+01	5.31E+01	5.56E+01	J		YES	5.29E+01	J			4.06E+01	J			4.49E+01	J		
Zinc	mg/kg	3.49E+01	2.34E+03	1.45E+02	J	YES		8.33E+01	J	YES		7.25E+01	J	YES		1.24E+02	J	YES	
VOLATILE ORGANIC COMPOUNDS																			
1,1,1-Trichloroethane	mg/kg	NA	1.55E+03	ND				ND				ND				2.00E-03	B		
1,2,4-Trimethylbenzene	mg/kg	NA	3.88E+02	ND				ND				ND				ND			
2-Butanone	mg/kg	NA	4.66E+03	ND				ND				ND				ND			
Acetone	mg/kg	NA	7.76E+02	ND				ND				ND				ND			
Methylene chloride	mg/kg	NA	8.41E+01	6.70E-03	B			5.80E-03	B			5.20E-03	B			7.20E-03	B		
Naphthalene	mg/kg	NA	1.55E+02	ND				ND				ND				ND			
Toluene	mg/kg	NA	1.55E+03	ND				ND				ND				2.10E-03	J		
Trichlorofluoromethane	mg/kg	NA	2.33E+03	ND				ND				ND				ND			
p-Cymene	mg/kg	NA	1.55E+03	ND				ND				ND				ND			
SEMIVOLATILE ORGANIC COMPOUNDS																			
Anthracene	mg/kg	NA	2.33E+03	ND				ND				ND				ND			
Butyl benzyl phthalate	mg/kg	NA	1.56E+03	ND				ND				ND				ND			
Di-n-butyl phthalate	mg/kg	NA	7.80E+02	ND				ND				ND				ND			
Phenanthrene	mg/kg	NA	2.32E+03	ND				ND				ND				ND			
bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	8.10E-02	B			9.30E-02	B			1.00E-01	B			1.00E-01	B		
PESTICIDES																			
alpha-BHC	mg/kg	NA	1.00E-01	ND				ND				ND				ND			

Table 5-2

Subsurface Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel				FTA-197				FTA-197				FTA-197				FTA-197			
Sample Location				FTA-197-GP05				FTA-197-GP06				FTA-197-GP07				FTA-197-GP08			
Sample Number				CA0012				CA0014				CA0016				CA0018			
Sample Date				1-Dec-99				1-Dec-99				2-Dec-99				1-Dec-99			
Sample Depth (Feet)				10-12				6-8				8-11				8-10			
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**
METALS																			
Aluminum	mg/kg	1.36E+04	7.80E+03	7.00E+03				9.45E+03			YES	7.96E+03			YES	1.58E+04		YES	YES
Antimony	mg/kg	1.31E+00	3.11E+00	7.10E-01	J			ND				ND				ND			
Arsenic	mg/kg	1.83E+01	4.26E-01	1.49E+01			YES	4.10E+00			YES	3.00E+00			YES	2.00E+00			YES
Barium	mg/kg	2.34E+02	5.47E+02	4.60E+01	J			6.99E+01	J			5.32E+01				8.69E+01	J		
Beryllium	mg/kg	8.60E-01	9.60E+00	4.20E+00	J	YES		1.20E+00	J	YES		1.30E+00	J	YES		8.90E-01	J	YES	
Cadmium	mg/kg	2.20E-01	6.25E+00	ND				ND				ND				ND			
Calcium	mg/kg	6.37E+02	NA	8.76E+02	J	YES		1.75E+03	J	YES		3.19E+03		YES		1.37E+03	J	YES	
Chromium	mg/kg	3.83E+01	2.32E+01	1.50E+01	J			1.24E+01	J			1.22E+01				1.86E+01	J		
Cobalt	mg/kg	1.75E+01	4.68E+02	1.56E+01	J			8.10E+00	J			5.10E+00	J			7.50E+00	J		
Copper	mg/kg	1.94E+01	3.13E+02	2.22E+01	J	YES		1.41E+01	J			1.03E+01				1.79E+01	J		
Iron	mg/kg	4.48E+04	2.34E+03	7.02E+04		YES	YES	2.06E+04			YES	1.57E+04			YES	2.28E+04			YES
Lead	mg/kg	3.85E+01	4.00E+02	4.45E+01	J	YES		1.41E+01	J			1.14E+01				1.22E+01	J		
Magnesium	mg/kg	7.66E+02	NA	8.65E+02		YES		1.69E+03		YES		2.97E+03		YES		4.76E+03		YES	
Manganese	mg/kg	1.36E+03	3.63E+02	1.12E+03	J		YES	7.17E+02	J		YES	2.98E+02				8.14E+01	J		
Mercury	mg/kg	7.00E-02	2.33E+00	6.60E-02				4.40E-02	B			2.10E-02	B			5.60E-02			
Nickel	mg/kg	1.29E+01	1.54E+02	3.69E+01	J	YES		1.28E+01	J			1.19E+01				2.29E+01	J	YES	
Potassium	mg/kg	7.11E+02	NA	7.19E+02	J	YES		3.90E+02	J			5.37E+02	J			5.54E+02	J		
Silver	mg/kg	2.40E-01	3.91E+01	ND				ND				ND				ND			
Sodium	mg/kg	7.02E+02	NA	ND				ND				ND				ND			
Thallium	mg/kg	1.40E+00	5.08E-01	1.20E+00	J		YES	ND				ND				ND			
Vanadium	mg/kg	6.49E+01	5.31E+01	2.93E+01	J			2.19E+01	J			1.92E+01				2.32E+01	J		
Zinc	mg/kg	3.49E+01	2.34E+03	7.51E+01	J	YES		3.61E+01	J	YES		3.14E+01				7.15E+01	J	YES	
VOLATILE ORGANIC COMPOUNDS																			
1,1,1-Trichloroethane	mg/kg	NA	1.55E+03	1.40E-03	B			ND				ND				1.30E-03	B		
1,2,4-Trimethylbenzene	mg/kg	NA	3.88E+02	ND				ND				1.20E-03	J			ND			
2-Butanone	mg/kg	NA	4.66E+03	ND				1.10E-02	B			ND				ND			
Acetone	mg/kg	NA	7.76E+02	ND				3.00E-02	J			1.00E-02	B			ND			
Methylene chloride	mg/kg	NA	8.41E+01	4.40E-03	B			6.20E-03	B			5.70E-03	B			5.30E-03	B		
Naphthalene	mg/kg	NA	1.55E+02	ND				ND				1.30E-03	B			ND			
Toluene	mg/kg	NA	1.55E+03	9.20E-04	J			1.30E-03	J			ND				1.60E-03	J		
Trichlorofluoromethane	mg/kg	NA	2.33E+03	ND				ND				ND				ND			
p-Cymene	mg/kg	NA	1.55E+03	ND				2.60E-03	J			ND				ND			
SEMIVOLATILE ORGANIC COMPOUNDS																			
Anthracene	mg/kg	NA	2.33E+03	ND				ND				ND				ND			
Butyl benzyl phthalate	mg/kg	NA	1.56E+03	ND				ND				ND				ND			
Di-n-butyl phthalate	mg/kg	NA	7.80E+02	ND				ND				ND				ND			
Phenanthrene	mg/kg	NA	2.32E+03	ND				ND				ND				ND			
bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	7.70E-02	B			7.90E-02	B			1.00E-01	J			7.50E-02	B		
PESTICIDES																			
alpha-BHC	mg/kg	NA	1.00E-01	ND				ND				ND				ND			

Table 5-2

Subsurface Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel				FTA-197				FTA-197				FTA-197				FTA-197			
Sample Location				FTA-197-GP09				FTA-197-GP10				FTA-197-GP11				FTA-197-GP12			
Sample Number				CA0022				CA0024				CA0026				CA0028			
Sample Date				2-Dec-99				2-Dec-99				2-Dec-99				2-Dec-99			
Sample Depth (Feet)				9-11				6-8				8-9				10-12			
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**
METALS																			
Aluminum	mg/kg	1.36E+04	7.80E+03	1.09E+04			YES	1.39E+04		YES	YES	1.00E+04			YES	1.30E+04			YES
Antimony	mg/kg	1.31E+00	3.11E+00	ND				ND				ND				9.60E-01	J		
Arsenic	mg/kg	1.83E+01	4.26E-01	2.80E+00			YES	1.50E+01			YES	3.70E+00			YES	8.30E+00			YES
Barium	mg/kg	2.34E+02	5.47E+02	4.30E+01				5.08E+01				5.05E+01				6.33E+01			
Beryllium	mg/kg	8.60E-01	9.60E+00	1.00E+00	J	YES		8.70E-01	J	YES		7.50E-01	J			1.30E+00	J	YES	
Cadmium	mg/kg	2.20E-01	6.25E+00	ND				ND				ND				ND			
Calcium	mg/kg	6.37E+02	NA	1.05E+03		YES		1.48E+02	J			1.97E+02	J			1.65E+03		YES	
Chromium	mg/kg	3.83E+01	2.32E+01	1.37E+01				1.90E+01				1.27E+01				1.78E+01			
Cobalt	mg/kg	1.75E+01	4.68E+02	9.90E+00	J			2.80E+00	J			6.70E+00	J			5.50E+00	J		
Copper	mg/kg	1.94E+01	3.13E+02	2.04E+01		YES		1.58E+01				1.57E+01				3.48E+01		YES	
Iron	mg/kg	4.48E+04	2.34E+03	2.92E+04			YES	4.57E+04		YES	YES	1.75E+04			YES	3.66E+04			YES
Lead	mg/kg	3.85E+01	4.00E+02	1.56E+01				1.40E+01				1.00E+01				1.39E+01			
Magnesium	mg/kg	7.66E+02	NA	4.35E+03		YES		8.08E+02		YES		8.82E+02		YES		2.79E+03		YES	
Manganese	mg/kg	1.36E+03	3.63E+02	2.01E+02				7.86E+01				1.28E+02				3.31E+01			
Mercury	mg/kg	7.00E-02	2.33E+00	ND				4.60E-02				3.60E-02	B			4.40E-02			
Nickel	mg/kg	1.29E+01	1.54E+02	2.33E+01		YES		7.00E+00				9.20E+00				1.80E+01		YES	
Potassium	mg/kg	7.11E+02	NA	8.77E+02		YES		6.95E+02				6.45E+02				7.01E+02			
Silver	mg/kg	2.40E-01	3.91E+01	ND				ND				ND				ND			
Sodium	mg/kg	7.02E+02	NA	6.44E+01	J			ND				ND				6.85E+01	J		
Thallium	mg/kg	1.40E+00	5.08E-01	ND				ND				ND				ND			
Vanadium	mg/kg	6.49E+01	5.31E+01	2.00E+01				3.79E+01				2.55E+01				3.42E+01			
Zinc	mg/kg	3.49E+01	2.34E+03	6.66E+01		YES		2.39E+01				3.33E+01				5.30E+01		YES	
VOLATILE ORGANIC COMPOUNDS																			
1,1,1-Trichloroethane	mg/kg	NA	1.55E+03	1.00E-03	B			9.30E-04	B			1.00E-03	B			1.00E-03	B		
1,2,4-Trimethylbenzene	mg/kg	NA	3.88E+02	ND				ND				ND				ND			
2-Butanone	mg/kg	NA	4.66E+03	ND				ND				ND				ND			
Acetone	mg/kg	NA	7.76E+02	ND				3.60E-02				8.10E-03	B			ND			
Methylene chloride	mg/kg	NA	8.41E+01	6.70E-03	B			4.90E-03	B			6.60E-03	B			6.70E-03	B		
Naphthalene	mg/kg	NA	1.55E+02	ND				ND				ND				ND			
Toluene	mg/kg	NA	1.55E+03	ND				ND				ND				ND			
Trichlorofluoromethane	mg/kg	NA	2.33E+03	ND				ND				ND				ND			
p-Cymene	mg/kg	NA	1.55E+03	ND				ND				ND				ND			
SEMIVOLATILE ORGANIC COMPOUNDS																			
Anthracene	mg/kg	NA	2.33E+03	ND				4.30E-02	J			ND				ND			
Butyl benzyl phthalate	mg/kg	NA	1.56E+03	ND				ND				ND				4.00E-02	J		
Di-n-butyl phthalate	mg/kg	NA	7.80E+02	ND				ND				ND				ND			
Phenanthrene	mg/kg	NA	2.32E+03	ND				1.10E-01	J			6.20E-02	J			ND			
bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	ND				ND				5.10E-02	J			1.30E-01	J		
PESTICIDES																			
alpha-BHC	mg/kg	NA	1.00E-01	5.60E-04	J			ND				ND				ND			

Table 5-2

Subsurface Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel				FTA-197				FTA-197				FTA-197				FTA-197			
Sample Location				FTA-197-GP13				FTA-197-GP14				FTA-197-GP15				FTA-197-GP16			
Sample Number				CA0030				CA0034				CA0037				CA0039			
Sample Date				6-Dec-99				6-Dec-99				3-Dec-99				6-Dec-99			
Sample Depth (Feet)				3-6				6-8				2-4				8-10			
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**
METALS																			
Aluminum	mg/kg	1.36E+04	7.80E+03	2.05E+04		YES	YES	1.77E+04		YES	YES	1.68E+04		YES	YES	1.65E+04		YES	YES
Antimony	mg/kg	1.31E+00	3.11E+00	ND				ND				5.10E-01	J			6.10E-01	J		
Arsenic	mg/kg	1.83E+01	4.26E-01	6.40E+00			YES	4.00E+00			YES	5.70E+00			YES	7.30E+00			YES
Barium	mg/kg	2.34E+02	5.47E+02	1.23E+02	J			9.18E+01	J			9.21E+01	J			1.12E+02	J		
Beryllium	mg/kg	8.60E-01	9.60E+00	1.90E+00	J	YES		1.40E+00	J	YES		1.30E+00	J	YES		1.30E+00	J	YES	
Cadmium	mg/kg	2.20E-01	6.25E+00	ND				ND				ND				ND			
Calcium	mg/kg	6.37E+02	NA	9.35E+02		YES		2.18E+03		YES		1.10E+03		YES		4.48E+03		YES	
Chromium	mg/kg	3.83E+01	2.32E+01	2.56E+01	J		YES	2.29E+01	J			2.05E+01	J			2.23E+01	J		
Cobalt	mg/kg	1.75E+01	4.68E+02	1.88E+01	J	YES		1.78E+01		YES		1.03E+01				1.63E+01			
Copper	mg/kg	1.94E+01	3.13E+02	4.18E+01		YES		3.91E+01		YES		3.43E+01		YES		5.24E+01		YES	
Iron	mg/kg	4.48E+04	2.34E+03	4.38E+04			YES	3.78E+04			YES	5.36E+04		YES	YES	3.94E+04			YES
Lead	mg/kg	3.85E+01	4.00E+02	2.17E+01	J			1.82E+01	J			2.66E+01	J			2.26E+01	J		
Magnesium	mg/kg	7.66E+02	NA	9.38E+03		YES		8.68E+03		YES		6.85E+03		YES		9.61E+03		YES	
Manganese	mg/kg	1.36E+03	3.63E+02	2.30E+02	J			1.79E+02	J			1.62E+02	J			4.32E+02	J		YES
Mercury	mg/kg	7.00E-02	2.33E+00	2.60E-02	B			2.60E-02	B			1.70E-02	B			5.20E-02	B		
Nickel	mg/kg	1.29E+01	1.54E+02	4.31E+01		YES		4.88E+01		YES		2.78E+01		YES		4.91E+01		YES	
Potassium	mg/kg	7.11E+02	NA	9.44E+02		YES		8.55E+02		YES		5.56E+02	J			8.33E+02		YES	
Silver	mg/kg	2.40E-01	3.91E+01	ND				ND				ND				ND			
Sodium	mg/kg	7.02E+02	NA	1.30E+02	B			1.07E+02	B			2.88E+02	J			1.58E+02	B		
Thallium	mg/kg	1.40E+00	5.08E-01	ND				ND				ND				7.40E-01	B		YES
Vanadium	mg/kg	6.49E+01	5.31E+01	3.15E+01				2.69E+01				3.63E+01				2.75E+01			
Zinc	mg/kg	3.49E+01	2.34E+03	1.16E+02		YES		1.23E+02		YES		8.60E+01		YES		1.21E+02		YES	
VOLATILE ORGANIC COMPOUNDS																			
1,1,1-Trichloroethane	mg/kg	NA	1.55E+03	8.80E-04	J			7.70E-04	J			ND				7.20E-04	J		
1,2,4-Trimethylbenzene	mg/kg	NA	3.88E+02	ND				ND				ND				ND			
2-Butanone	mg/kg	NA	4.66E+03	ND				ND				ND				ND			
Acetone	mg/kg	NA	7.76E+02	ND				ND				ND				ND			
Methylene chloride	mg/kg	NA	8.41E+01	5.30E-03	B			4.40E-03	B			5.20E-03	B			3.60E-03	B		
Naphthalene	mg/kg	NA	1.55E+02	ND				ND				ND				ND			
Toluene	mg/kg	NA	1.55E+03	ND				ND				ND				ND			
Trichlorofluoromethane	mg/kg	NA	2.33E+03	ND				ND				2.20E-03	J			ND			
p-Cymene	mg/kg	NA	1.55E+03	ND				ND				ND				ND			
SEMIVOLATILE ORGANIC COMPOUNDS																			
Anthracene	mg/kg	NA	2.33E+03	ND				ND				ND				ND			
Butyl benzyl phthalate	mg/kg	NA	1.56E+03	ND				ND				ND				ND			
Di-n-butyl phthalate	mg/kg	NA	7.80E+02	ND				ND				ND				ND			
Phenanthrene	mg/kg	NA	2.32E+03	ND				ND				ND				ND			
bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	6.30E-02	B			7.10E-02	B			4.90E-02	J			7.80E-02	B		
PESTICIDES																			
alpha-BHC	mg/kg	NA	1.00E-01	ND				ND				ND				ND			

Table 5-2

Subsurface Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel				FTA-197				FTA-197				FTA-197				FTA-197			
Sample Location				FTA-197-GP17				FTA-197-GP18				FTA-197-GP19				FTA-197-GP20			
Sample Number				CA0041				CA0043				CA0046				CA0048			
Sample Date				6-Dec-99				6-Dec-99				7-Dec-99				7-Dec-99			
Sample Depth (Feet)				8-10				8-11				4-6				2-4			
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**
METALS																			
Aluminum	mg/kg	1.36E+04	7.80E+03	1.20E+04			YES	1.82E+04		YES	YES	1.53E+04		YES	YES	1.32E+04			YES
Antimony	mg/kg	1.31E+00	3.11E+00	7.80E-01	J			5.20E-01	J			ND				ND			
Arsenic	mg/kg	1.83E+01	4.26E-01	2.09E+01		YES	YES	5.10E+00			YES	3.30E+00			YES	2.80E+00			YES
Barium	mg/kg	2.34E+02	5.47E+02	1.30E+02	J			1.03E+02	J			3.59E+01				7.07E+01			
Beryllium	mg/kg	8.60E-01	9.60E+00	2.00E+00	J	YES		1.30E+00	J	YES		1.30E+00	J	YES		2.00E+00	J	YES	
Cadmium	mg/kg	2.20E-01	6.25E+00	ND				ND				ND				ND			
Calcium	mg/kg	6.37E+02	NA	9.15E+02		YES		2.31E+03		YES		2.00E+02	J			1.47E+03	J	YES	
Chromium	mg/kg	3.83E+01	2.32E+01	1.39E+01	J			2.28E+01	J			2.07E+01				1.64E+01			
Cobalt	mg/kg	1.75E+01	4.68E+02	1.90E+01		YES		1.52E+01				9.10E+00	J			3.35E+01	J	YES	
Copper	mg/kg	1.94E+01	3.13E+02	3.71E+01		YES		4.12E+01		YES		4.34E+01	J	YES		3.08E+01	J	YES	
Iron	mg/kg	4.48E+04	2.34E+03	8.91E+04		YES	YES	4.08E+04			YES	3.49E+04			YES	2.90E+04			YES
Lead	mg/kg	3.85E+01	4.00E+02	3.90E+01	J	YES		2.06E+01	J			1.98E+01				1.48E+01			
Magnesium	mg/kg	7.66E+02	NA	3.22E+03		YES		9.88E+03		YES		6.08E+03		YES		7.28E+03		YES	
Manganese	mg/kg	1.36E+03	3.63E+02	1.77E+02	J			4.66E+02	J		YES	7.44E+01	J			3.15E+02	J		
Mercury	mg/kg	7.00E-02	2.33E+00	4.80E-02	B			5.30E-02	B			2.80E-02	B			2.40E-02	B		
Nickel	mg/kg	1.29E+01	1.54E+02	4.07E+01		YES		4.87E+01		YES		3.47E+01		YES		6.00E+01		YES	
Potassium	mg/kg	7.11E+02	NA	5.98E+02				9.80E+02		YES		4.46E+02	J			3.02E+02	J		
Silver	mg/kg	2.40E-01	3.91E+01	ND				ND				ND				ND			
Sodium	mg/kg	7.02E+02	NA	2.11E+02	B			2.05E+02	B			9.79E+01	J			1.40E+02	J		
Thallium	mg/kg	1.40E+00	5.08E-01	7.80E-01	B		YES	ND				5.30E-01	B		YES	8.80E-01	B		YES
Vanadium	mg/kg	6.49E+01	5.31E+01	3.93E+01				2.65E+01				2.44E+01				2.01E+01			
Zinc	mg/kg	3.49E+01	2.34E+03	7.96E+01		YES		1.22E+02		YES		9.76E+01		YES		9.76E+01		YES	
VOLATILE ORGANIC COMPOUNDS																			
1,1,1-Trichloroethane	mg/kg	NA	1.55E+03	8.30E-04	J			8.50E-04	J			9.20E-04	J			9.60E-04	J		
1,2,4-Trimethylbenzene	mg/kg	NA	3.88E+02	ND				ND				ND				ND			
2-Butanone	mg/kg	NA	4.66E+03	ND				ND				ND				ND			
Acetone	mg/kg	NA	7.76E+02	ND				7.40E-03	J			ND				ND			
Methylene chloride	mg/kg	NA	8.41E+01	5.10E-03	B			6.10E-03	B			4.70E-03	B			6.20E-03	B		
Naphthalene	mg/kg	NA	1.55E+02	ND				ND				ND				ND			
Toluene	mg/kg	NA	1.55E+03	ND				ND				ND				ND			
Trichlorofluoromethane	mg/kg	NA	2.33E+03	ND				ND				ND				ND			
p-Cymene	mg/kg	NA	1.55E+03	ND				ND				ND				ND			
SEMIVOLATILE ORGANIC COMPOUNDS																			
Anthracene	mg/kg	NA	2.33E+03	ND				ND				ND				ND			
Butyl benzyl phthalate	mg/kg	NA	1.56E+03	ND				ND				ND				ND			
Di-n-butyl phthalate	mg/kg	NA	7.80E+02	ND				ND				ND				ND			
Phenanthrene	mg/kg	NA	2.32E+03	ND				ND				ND				ND			
bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	7.20E-02	B			6.40E-02	B			4.10E-02	J			ND			
PESTICIDES																			
alpha-BHC	mg/kg	NA	1.00E-01	ND				ND				ND				ND			

Table 5-2

Subsurface Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel				FTA-197				FTA-197				FTA-197				FTA-197			
Sample Location				FTA-197-GP21				FTA-197-GP22				FTA-197-GP23				FTA-197-GP24			
Sample Number				CA0050				CA0052				CA0054				CA0056			
Sample Date				3-Dec-99				2-Dec-99				2-Dec-99				2-Dec-99			
Sample Depth (Feet)				4-6				4-6				4-6				9-11			
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**
METALS																			
Aluminum	mg/kg	1.36E+04	7.80E+03	2.00E+04		YES	YES	1.12E+04			YES	1.50E+04		YES	YES	1.63E+04		YES	YES
Antimony	mg/kg	1.31E+00	3.11E+00	ND				7.70E-01	J			1.30E+00	J			7.80E-01	J		
Arsenic	mg/kg	1.83E+01	4.26E-01	5.80E+00			YES	4.20E+00			YES	6.90E+00			YES	7.00E+00			YES
Barium	mg/kg	2.34E+02	5.47E+02	4.73E+01	J			2.79E+01				4.55E+01				9.79E+01			
Beryllium	mg/kg	8.60E-01	9.60E+00	1.40E+00	J	YES		8.40E-01	J			1.10E+00	J	YES		1.80E+00	J	YES	
Cadmium	mg/kg	2.20E-01	6.25E+00	ND				ND				ND				2.20E-01	J	YES	
Calcium	mg/kg	6.37E+02	NA	7.92E+02		YES		9.36E+01	J			5.09E+02	J			1.75E+03		YES	
Chromium	mg/kg	3.83E+01	2.32E+01	2.40E+01	J		YES	1.25E+01				1.85E+01				1.85E+01			
Cobalt	mg/kg	1.75E+01	4.68E+02	1.57E+01				6.10E+00	J			1.49E+01	J			1.93E+01	J	YES	
Copper	mg/kg	1.94E+01	3.13E+02	3.98E+01		YES		3.04E+01		YES		6.50E+01		YES		5.61E+01		YES	
Iron	mg/kg	4.48E+04	2.34E+03	4.59E+04		YES	YES	2.54E+04			YES	2.93E+04			YES	3.34E+04			YES
Lead	mg/kg	3.85E+01	4.00E+02	2.11E+01	J			1.41E+01				2.00E+01				2.56E+01			
Magnesium	mg/kg	7.66E+02	NA	8.12E+03		YES		5.20E+03		YES		5.97E+03		YES		7.72E+03		YES	
Manganese	mg/kg	1.36E+03	3.63E+02	1.66E+02	J			6.54E+01				8.40E+01				3.88E+02			YES
Mercury	mg/kg	7.00E-02	2.33E+00	1.80E-02	B			2.80E-02	B			6.80E-02				8.20E-02		YES	
Nickel	mg/kg	1.29E+01	1.54E+02	4.07E+01		YES		2.64E+01		YES		1.99E+01		YES		6.73E+01		YES	
Potassium	mg/kg	7.11E+02	NA	8.90E+02		YES		5.37E+02	J			1.15E+03		YES		9.57E+02		YES	
Silver	mg/kg	2.40E-01	3.91E+01	ND				ND				ND				ND			
Sodium	mg/kg	7.02E+02	NA	2.24E+02	B			5.22E+01	J			9.25E+01	J			7.10E+01	J		
Thallium	mg/kg	1.40E+00	5.08E-01	ND				ND				ND				5.40E-01	J		YES
Vanadium	mg/kg	6.49E+01	5.31E+01	3.31E+01				1.76E+01				3.39E+01				3.05E+01			
Zinc	mg/kg	3.49E+01	2.34E+03	1.11E+02		YES		8.31E+01		YES		7.31E+01		YES		1.86E+02		YES	
VOLATILE ORGANIC COMPOUNDS																			
1,1,1-Trichloroethane	mg/kg	NA	1.55E+03	7.80E-04	J			8.00E-04	J			7.50E-04	J			9.00E-04	J		
1,2,4-Trimethylbenzene	mg/kg	NA	3.88E+02	ND				ND				ND				ND			
2-Butanone	mg/kg	NA	4.66E+03	ND				ND				ND				ND			
Acetone	mg/kg	NA	7.76E+02	ND				ND				ND				ND			
Methylene chloride	mg/kg	NA	8.41E+01	5.40E-03	B			5.60E-03	B			5.10E-03	B			5.50E-03	B		
Naphthalene	mg/kg	NA	1.55E+02	ND				ND				ND				ND			
Toluene	mg/kg	NA	1.55E+03	ND				ND				ND				ND			
Trichlorofluoromethane	mg/kg	NA	2.33E+03	ND				ND				ND				ND			
p-Cymene	mg/kg	NA	1.55E+03	ND				ND				ND				ND			
SEMIVOLATILE ORGANIC COMPOUNDS																			
Anthracene	mg/kg	NA	2.33E+03	ND				ND				ND				ND			
Butyl benzyl phthalate	mg/kg	NA	1.56E+03	ND				ND				ND				ND			
Di-n-butyl phthalate	mg/kg	NA	7.80E+02	ND				ND				ND				ND			
Phenanthrene	mg/kg	NA	2.32E+03	ND				ND				ND				ND			
bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	ND				6.00E-02	J			8.60E-02	J			4.80E-02	J		
PESTICIDES																			
alpha-BHC	mg/kg	NA	1.00E-01	ND				ND				ND				ND			

Table 5-2

Subsurface Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel				FTA-197				FTA-197				FTA-197				FTA-197			
Sample Location				FTA-197-GP25				FTA-197-GP26				FTA-197-MW07				FTA-197-MW08			
Sample Number				CA0058				CA0060				CA0072				CA0074			
Sample Date				3-Dec-99				3-Dec-99				7-Dec-99				7-Dec-99			
Sample Depth (Feet)				10-12				2-4				6-8				2-4			
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**
METALS																			
Aluminum	mg/kg	1.36E+04	7.80E+03	1.67E+04		YES	YES	1.42E+04		YES	YES	1.43E+04		YES	YES	1.61E+04		YES	YES
Antimony	mg/kg	1.31E+00	3.11E+00	6.30E-01	J			8.80E-01	J			ND				ND			
Arsenic	mg/kg	1.83E+01	4.26E-01	8.20E+00			YES	6.20E+00			YES	4.20E+00			YES	3.20E+00			YES
Barium	mg/kg	2.34E+02	5.47E+02	3.96E+01	J			9.44E+01	J			4.36E+01				1.70E+02			
Beryllium	mg/kg	8.60E-01	9.60E+00	1.00E+00	J	YES		1.90E+00	J	YES		1.20E+00	J	YES		2.00E+00	J	YES	
Cadmium	mg/kg	2.20E-01	6.25E+00	5.00E-01	J	YES		ND				ND				ND			
Calcium	mg/kg	6.37E+02	NA	5.73E+03		YES		4.65E+03		YES		1.04E+02	J			6.90E+02	J	YES	
Chromium	mg/kg	3.83E+01	2.32E+01	2.12E+01	J			2.03E+01	J			2.85E+01			YES	2.06E+01			
Cobalt	mg/kg	1.75E+01	4.68E+02	1.37E+01				1.78E+01		YES		3.17E+01	J	YES		1.08E+01	J		
Copper	mg/kg	1.94E+01	3.13E+02	7.26E+01		YES		4.20E+01		YES		3.06E+01	J	YES		4.22E+01	J	YES	
Iron	mg/kg	4.48E+04	2.34E+03	3.85E+04			YES	3.35E+04			YES	4.60E+04		YES	YES	3.58E+04			YES
Lead	mg/kg	3.85E+01	4.00E+02	2.50E+01	J			1.83E+01	J			2.71E+01				1.96E+01			
Magnesium	mg/kg	7.66E+02	NA	1.26E+04		YES		8.94E+03		YES		4.00E+03		YES		7.46E+03		YES	
Manganese	mg/kg	1.36E+03	3.63E+02	2.36E+02	J			1.26E+02	J			3.34E+02	J			6.95E+01	J		
Mercury	mg/kg	7.00E-02	2.33E+00	8.00E-02		YES		2.50E-02	B			3.30E-02	B			3.20E-02	B		
Nickel	mg/kg	1.29E+01	1.54E+02	4.57E+01		YES		5.09E+01		YES		3.84E+01		YES		4.59E+01		YES	
Potassium	mg/kg	7.11E+02	NA	1.14E+03		YES		7.20E+02		YES		4.39E+02	J			4.54E+02	J		
Silver	mg/kg	2.40E-01	3.91E+01	ND				ND				ND				ND			
Sodium	mg/kg	7.02E+02	NA	1.47E+02	B			1.57E+02	B			6.55E+01	J			1.21E+02	J		
Thallium	mg/kg	1.40E+00	5.08E-01	6.80E-01	J		YES	ND				7.90E-01	B		YES	6.70E-01	B		YES
Vanadium	mg/kg	6.49E+01	5.31E+01	3.42E+01				2.75E+01				3.19E+01				2.64E+01			
Zinc	mg/kg	3.49E+01	2.34E+03	1.54E+02		YES		1.10E+02		YES		7.67E+01		YES		1.12E+02		YES	
VOLATILE ORGANIC COMPOUNDS																			
1,1,1-Trichloroethane	mg/kg	NA	1.55E+03	7.30E-04	J			ND				ND				ND			
1,2,4-Trimethylbenzene	mg/kg	NA	3.88E+02	ND				ND				ND				ND			
2-Butanone	mg/kg	NA	4.66E+03	ND				ND				ND				ND			
Acetone	mg/kg	NA	7.76E+02	ND				ND				ND				ND			
Methylene chloride	mg/kg	NA	8.41E+01	4.40E-03	B			5.10E-03	B			4.90E-03	B			5.40E-03	B		
Naphthalene	mg/kg	NA	1.55E+02	ND				ND				ND				ND			
Toluene	mg/kg	NA	1.55E+03	ND				ND				ND				ND			
Trichlorofluoromethane	mg/kg	NA	2.33E+03	ND				ND				2.20E-03	J			4.20E-03	J		
p-Cymene	mg/kg	NA	1.55E+03	ND				ND				ND				ND			
SEMIVOLATILE ORGANIC COMPOUNDS																			
Anthracene	mg/kg	NA	2.33E+03	ND				ND				ND				ND			
Butyl benzyl phthalate	mg/kg	NA	1.56E+03	ND				ND				ND				ND			
Di-n-butyl phthalate	mg/kg	NA	7.80E+02	1.60E-01	J			1.70E-01	J			ND				ND			
Phenanthrene	mg/kg	NA	2.32E+03	ND				ND				ND				ND			
bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	2.20E-01	J			5.50E-02	J			ND				ND			
PESTICIDES																			
alpha-BHC	mg/kg	NA	1.00E-01	ND				ND				ND				ND			

Table 5-2

Subsurface Soil Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Analyses performed by Quanterra Environmental Services using U.S. Environmental Protection Agency (EPA) SW-846 analytical methods, including Update III methods where applicable.

[a] Bkg - Background. Concentration listed is two times (2x) the arithmetic mean of background metals concentration given in Science Applications International Corporation (1998), *Final Background Metals Survey Report, Fort McClellan, Alabama* , July.

[b] Residential human health site-specific screening level (SSSL) as given in IT Corporation (2000), *Final Human Health and Ecological Screening Values and PAH Background Summary Report, Fort McClellan, Calhoun County, Alabama* , July.

B - Analyte detected in laboratory or field blank at concentration greater than the reporting limit (and greater than zero).
J - Result is greater than method detection limit but less than or equal to reporting limit.
mg/kg - Milligrams per kilogram.
NA - Not available.
ND - Not detected.
Qual - Data validation qualifier.

Table 5-3

Groundwater Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel Sample Location Sample Number Sample Date				FTA-197 FTA-197-MW01 CA3001 11-May-00				FTA-197 FTA-197-MW02 CA3004 17-May-00				FTA-197 FTA-197-MW03 CA3005 17-May-00				FTA-197 FTA-197-MW04 CA3006 16-May-00			
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**
METALS																			
Aluminum	mg/L	2.34E+00	1.56E+00	8.24E-01				2.06E-01	B			8.17E-01				1.03E+00			
Antimony	mg/L	3.19E-03	6.20E-04	ND				ND				ND				ND			
Arsenic	mg/L	1.78E-02	4.00E-05	ND				ND				ND				ND			
Barium	mg/L	1.27E-01	1.10E-01	2.30E-02	B			3.08E-02	J			2.22E-02	J			2.92E-02	J		
Beryllium	mg/L	1.24E-03	3.12E-03	5.20E-04	B			ND				ND				ND			
Calcium	mg/L	5.65E+01	NA	2.85E+01				7.10E+01		YES		1.92E+02		YES		3.45E+02		YES	
Chromium	mg/L	NA	4.69E-03	3.20E-03	J			ND				1.40E-03	J			2.60E-03	J		
Cobalt	mg/L	2.34E-02	9.39E-02	ND				ND				2.80E-03	J			ND			
Copper	mg/L	2.55E-02	6.26E-02	ND				ND				ND				ND			
Iron	mg/L	7.04E+00	4.69E-01	2.22E+00			YES	3.94E-01				1.09E+00			YES	1.27E+00			YES
Magnesium	mg/L	2.13E+01	NA	1.44E+01				5.00E+01		YES		2.01E+02		YES		1.78E+02		YES	
Manganese	mg/L	5.81E-01	7.35E-02	2.33E-01			YES	2.84E-01			YES	2.56E-01			YES	1.27E-01			YES
Nickel	mg/L	NA	3.13E-02	2.40E-03	J			ND				2.10E-03	J			3.60E-03	J		
Potassium	mg/L	7.20E+00	NA	1.16E+00	J			2.92E+00	J			2.19E+00	J			1.93E+00	J		
Selenium	mg/L	NA	7.82E-03	ND				ND				ND				ND			
Sodium	mg/L	1.48E+01	NA	1.15E+00	J			5.03E+01		YES		1.02E+02		YES		1.16E+02		YES	
Thallium	mg/L	1.45E-03	1.00E-04	ND				ND				ND				ND			
Vanadium	mg/L	1.70E-02	1.10E-02	3.30E-03	J			ND				ND				ND			
Zinc	mg/L	2.20E-01	4.69E-01	1.74E-02	J			ND				ND				3.40E-03	B		
VOLATILE ORGANIC COMPOUNDS																			
Acetone	mg/L	NA	1.56E-01	5.20E-03	B			3.20E-03	B			1.10E-03	B			ND			
Carbon disulfide	mg/L	NA	1.51E-01	ND				1.30E-04	B			ND				ND			
Chloromethane	mg/L	NA	3.92E-03	5.30E-04	B			1.60E-04	B			1.60E-04	B			ND			
SEMIVOLATILE ORGANIC COMPOUNDS																			
bis(2-Ethylhexyl)phthalate	mg/L	NA	4.30E-03	ND				ND				ND				ND			
NITROAROMATICS																			
2-Nitrotoluene	mg/L	NA	1.53E-02	7.50E-04				3.10E-04				ND				ND			
RDX	mg/L	NA	6.60E-04	ND				ND				7.40E-04			YES	ND			
PESTICIDES																			
4,4'-DDD	mg/L	NA	1.80E-04	5.90E-05	J			2.40E-05	J			2.00E-05	J			ND			
Endrin aldehyde	mg/L	NA	3.00E-05	1.50E-05	J			ND				ND				ND			

Table 5-3

Groundwater Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel / Sample Location / Sample Number / Sample Date				FTA-197 FTA-197-MW05 CA3007 10-May-00				FTA-197 FTA-197-MW06 CA3008 10-May-00				FTA-197 FTA-197-MW07 CA3009 14-Jun-00				FTA-197 FTA-197-MW08 CA3010 16-May-00			
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**	**Result**	**Qual**	**>BKG**	**>SSSL**
METALS																			
Aluminum	mg/L	2.34E+00	1.56E+00	1.64E-01	B			3.37E-01	B			1.93E-01	B			2.42E-01	B		
Antimony	mg/L	3.19E-03	6.20E-04	ND				ND				5.84E-02	J	YES	YES	ND			
Arsenic	mg/L	1.78E-02	4.00E-05	ND				ND				1.33E-02			YES	ND			
Barium	mg/L	1.27E-01	1.10E-01	1.59E-02	J			4.33E-02	J			2.69E-01		YES	YES	3.26E-02	J		
Beryllium	mg/L	1.24E-03	3.12E-03	ND				ND				ND				ND			
Calcium	mg/L	5.65E+01	NA	1.45E+00	J			9.53E+01		YES		5.06E+01				6.56E+01		YES	
Chromium	mg/L	NA	4.69E-03	ND				ND				3.50E-03	J			ND			
Cobalt	mg/L	2.34E-02	9.39E-02	5.90E-03	J			ND				ND				ND			
Copper	mg/L	2.55E-02	6.26E-02	ND				ND				2.40E-03	B			ND			
Iron	mg/L	7.04E+00	4.69E-01	1.02E-01				6.91E-01			YES	1.48E-01				2.13E+00			YES
Magnesium	mg/L	2.13E+01	NA	5.41E-01	J			4.75E+01		YES		2.05E+01				2.10E+01			
Manganese	mg/L	5.81E-01	7.35E-02	1.79E-01			YES	3.85E-01			YES	2.20E-02				6.03E-01		YES	YES
Nickel	mg/L	NA	3.13E-02	7.80E-03	J			ND				3.90E-03	J			ND			
Potassium	mg/L	7.20E+00	NA	3.49E-01	J			8.18E-01	J			1.20E+00	J			1.90E+00	J		
Selenium	mg/L	NA	7.82E-03	ND				ND				5.90E-03				ND			
Sodium	mg/L	1.48E+01	NA	1.46E+00	J			4.56E+01		YES		1.37E+01				1.30E+01			
Thallium	mg/L	1.45E-03	1.00E-04	5.40E-03	J	YES	YES	ND				ND				ND			
Vanadium	mg/L	1.70E-02	1.10E-02	ND				ND				ND				ND			
Zinc	mg/L	2.20E-01	4.69E-01	6.00E-03	J			ND				1.08E-02	B			ND			
VOLATILE ORGANIC COMPOUNDS																			
Acetone	mg/L	NA	1.56E-01	5.60E-03	B			2.90E-03	B			ND				ND			
Carbon disulfide	mg/L	NA	1.51E-01	1.60E-04	B			ND				ND				ND			
Chloromethane	mg/L	NA	3.92E-03	9.20E-04	B			5.30E-04	B			ND				1.20E-04	J		
SEMIVOLATILE ORGANIC COMPOUNDS																			
bis(2-Ethylhexyl)phthalate	mg/L	NA	4.30E-03	ND				ND				2.30E-03	J			ND			
NITROAROMATICS																			
2-Nitrotoluene	mg/L	NA	1.53E-02	ND				ND				ND				ND			
RDX	mg/L	NA	6.60E-04	ND				ND				ND				ND			
PESTICIDES																			
4,4'-DDD	mg/L	NA	1.80E-04	3.20E-05	J			ND				ND				ND			
Endrin aldehyde	mg/L	NA	3.00E-05	ND				ND				ND				ND			

Analyses performed by Quanterra Environmental Services using U.S. Environmental Protection Agency (EPA) SW-846 analytical methods, including Update III methods where applicable.

[a] Bkg - Background. Concentration listed is two times (2x) the arithmetic mean of background metals concentration given in Science Applications International Corporation (1998), *Final Background Metals Survey Report, Fort McClellan, Alabama,* July.

[b] Residential human health site-specific screening level (SSSL) as given in IT Corporation (2000), *Final Human Health and Ecological Screening Values and PAH Background Summary Report, Fort McClellan, Calhoun County, Alabama,* July.

B - Analyte detected in laboratory or field blank at concentration greater than the reporting limit (and greater than zero).
J - Result is greater than method detection limit but less than or equal to reporting limit.
mg/L - Milligrams per liter.
NA - Not available.
ND - Not detected.
Qual - Data validation qualifier.

Table 5-4

Surface Water Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel / Sample Location / Sample Number / Sample Date					FTA-197 / FTA-197-SW/SD01 / CA2001 / 24-Jan-00					FTA-197 / FTA-197-SW/SD02 / CA2002 / 24-Jan-00					FTA-197 / FTA-197-SW/SD05 / CA2005 / 25-Jan-00				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
METALS																			
Aluminum	mg/L	5.26E+00	1.53E+01	8.70E-02	7.91E-02	B				1.04E-01	B			YES	1.34E+00				YES
Barium	mg/L	7.53E-02	1.10E+00	3.90E-03	1.71E-02	J			YES	1.71E-02	J			YES	1.85E-02	J			YES
Calcium	mg/L	2.52E+01	NA	1.16E+02	3.56E+00	J				4.11E+00	J				7.83E+00				
Chromium	mg/L	1.11E-02	4.08E-02	1.10E-02	ND					ND					ND				
Copper	mg/L	1.27E-02	6.23E-01	6.54E-03	ND					ND					ND				
Iron	mg/L	1.96E+01	4.70E+00	1.00E+00	6.59E-02	J				1.33E-01					2.25E+00				YES
Lead	mg/L	8.60E-03	1.50E-02	1.32E-03	ND					ND					1.80E-03	J			YES
Magnesium	mg/L	1.10E+01	NA	8.20E+01	1.84E+00	J				2.12E+00	J				6.63E+00	J			
Manganese	mg/L	5.65E-01	6.40E-01	8.00E-02	5.80E-03	J				1.09E-02	B				2.07E-02				
Mercury	mg/L	NA	4.25E-03	1.00E-05	7.20E-05	J			YES	8.30E-05	J			YES	6.90E-05	J			YES
Nickel	mg/L	2.24E-02	3.10E-01	8.77E-02	ND					ND					ND				
Potassium	mg/L	2.56E+00	NA	5.30E+01	1.17E+00	J				1.17E+00	J				7.91E-01	J			
Sodium	mg/L	3.44E+00	NA	6.80E+02	1.02E+00	J				9.58E-01	J				2.38E+00	J			
Vanadium	mg/L	1.52E-02	7.90E-02	1.90E-02	ND					ND					2.90E-03	J			
Zinc	mg/L	4.03E-02	4.65E+00	5.89E-02	ND					2.60E-03	J				1.39E-01		YES		YES
VOLATILE ORGANIC COMPOUNDS																			
1,1,2,2-Tetrachloroethane	mg/L	NA	5.01E-03	2.40E-01	7.40E-04	J				5.60E-04	J				ND				
Acetone	mg/L	NA	1.57E+00	7.80E+01	6.20E-04	B				ND					1.40E-03	B			

Table 5-4

Surface Water Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel Sample Location Sample Number Sample Date					FTA-197 FTA-197-SW/SD06 CA2006 24-Jan-00					FTA-197 FTA-197-SW/SD07 CA2007 24-Jan-00				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
METALS														
Aluminum	mg/L	5.26E+00	1.53E+01	8.70E-02	1.28E+00				YES	1.02E+00				YES
Barium	mg/L	7.53E-02	1.10E+00	3.90E-03	1.82E-02	J			YES	1.66E-02	J			YES
Calcium	mg/L	2.52E+01	NA	1.16E+02	8.33E+00					1.32E+01				
Chromium	mg/L	1.11E-02	4.08E-02	1.10E-02	1.20E-03	B				ND				
Copper	mg/L	1.27E-02	6.23E-01	6.54E-03	2.10E-03	J				ND				
Iron	mg/L	1.96E+01	4.70E+00	1.00E+00	1.97E+00				YES	1.39E+00				YES
Lead	mg/L	8.60E-03	1.50E-02	1.32E-03	ND					ND				
Magnesium	mg/L	1.10E+01	NA	8.20E+01	7.29E+00	J				8.04E+00	J			
Manganese	mg/L	5.65E-01	6.40E-01	8.00E-02	1.49E-02	J				1.13E-02	B			
Mercury	mg/L	NA	4.25E-03	1.00E-05	8.60E-05	J			YES	6.50E-05	J			YES
Nickel	mg/L	2.24E-02	3.10E-01	8.77E-02	2.90E-03	B				ND				
Potassium	mg/L	2.56E+00	NA	5.30E+01	8.01E-01	J				6.27E-01	J			
Sodium	mg/L	3.44E+00	NA	6.80E+02	2.62E+00	J				2.00E+00	J			
Vanadium	mg/L	1.52E-02	7.90E-02	1.90E-02	3.20E-03	J				2.40E-03	J			
Zinc	mg/L	4.03E-02	4.65E+00	5.89E-02	1.12E-02	J				9.50E-03	J			
VOLATILE ORGANIC COMPOUNDS														
1,1,2,2-Tetrachloroethane	mg/L	NA	5.01E-03	2.40E-01	ND					ND				
Acetone	mg/L	NA	1.57E+00	7.80E+01	ND					ND				

Analyses performed by Quanterra Environmental Services using U.S. Environmental Protection Agency (EPA) SW-846 analytical methods, including Update III methods where applicable.

[a] Bkg - Background. Concentration listed is two times (2x) the arithmetic mean of background metals concentration given in Science Applications International Corporation (1998), *Final Background Metals Survey Report, Fort McClellan, Alabama,* July.

[b] Recreational site user site-specific screening level (SSSL) and ecological screening value (ESV) as given in IT Corporation (2000), *Final Human Health and Ecological Screening Values and PAH Background Summary Report, Fort McClellan, Calhoun County, Alabama,* July.

B - Analyte detected in laboratory or field blank at concentration greater than the reporting limit (and greater than zero).

J - Result is greater than method detection limit but less than or equal to reporting limit.

mg/L - Milligrams per liter.

NA - Not available.

ND - Not detected.

Qual - Data validation qualifier.

Table 5-5

Sediment Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197					FTA-197				
Sample Location					FTA-197-SWSD01					FTA-197-SW/SD02					FTA-197-SW/SD05				
Sample Number					CA1001					CA1002					CA1005				
Sample Date					24-Jan-00					24-Jan-00					25-Jan-00				
Sample Depth (Feet)					0- .5					0- .5					0- .5				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
METALS																			
Aluminum	mg/kg	8.59E+03	1.15E+06	NA	2.78E+03					1.77E+03					8.09E+03				
Antimony	mg/kg	7.30E-01	4.22E+02	1.20E+01	ND					ND					7.00E-01	J			
Arsenic	mg/kg	1.13E+01	5.58E+01	7.24E+00	2.20E+00					2.30E+00					1.20E+01		YES		YES
Barium	mg/kg	9.89E+01	8.36E+04	NA	3.24E+01	J				1.79E+01	J				4.50E+01	J			
Beryllium	mg/kg	9.70E-01	1.50E+02	NA	4.00E+00	J	YES			7.70E-01	J				1.10E+00	J	YES		
Calcium	mg/kg	1.11E+03	NA	NA	3.19E+02	J				2.46E+02	J				6.97E+02				
Chromium	mg/kg	3.12E+01	2.79E+03	5.23E+01	1.82E+01					1.45E+01					1.38E+01				
Cobalt	mg/kg	1.10E+01	6.72E+04	5.00E+01	5.00E+00	J				3.20E+00	J				1.01E+01				
Copper	mg/kg	1.71E+01	4.74E+04	1.87E+01	2.70E+00	J				1.90E+00	J				4.63E+01		YES		YES
Iron	mg/kg	3.53E+04	3.59E+05	NA	1.64E+04					1.07E+04					8.14E+04	J	YES		
Lead	mg/kg	3.78E+01	4.00E+02	3.02E+01	7.80E+00					1.17E+01					1.57E+01				
Magnesium	mg/kg	9.06E+02	NA	NA	1.15E+02	J				1.54E+02	J				2.68E+03		YES		
Manganese	mg/kg	7.12E+02	4.38E+04	NA	4.24E+02					8.43E+02		YES			5.09E+02				
Mercury	mg/kg	1.10E-01	2.99E+02	1.30E-01	3.80E-02	B				3.70E-02	B				5.50E-02	B			
Nickel	mg/kg	1.30E+01	1.76E+04	1.59E+01	9.80E+00					3.90E+00	J				2.30E+01		YES		YES
Potassium	mg/kg	1.01E+03	NA	NA	7.68E+01	J				2.22E+02	J				4.20E+02	J			
Thallium	mg/kg	1.30E-01	7.78E+01	NA	ND					ND					6.00E-01	B	YES		
Vanadium	mg/kg	4.09E+01	4.83E+03	NA	1.31E+01					1.53E+01					2.56E+01				
Zinc	mg/kg	5.27E+01	3.44E+05	1.24E+02	4.80E+01	J				1.54E+01	J				1.84E+02	J	YES		YES
VOLATILE ORGANIC COMPOUNDS																			
1,1,1-Trichloroethane	mg/kg	NA	2.11E+05	1.70E-01	1.00E-03	B				1.10E-03	B				9.10E-04	B			
Methylene chloride	mg/kg	NA	9.84E+03	1.26E+00	2.70E-03	B				3.00E-03	B				2.10E-03	B			
SEMIVOLATILE ORGANIC COMPOUNDS																			
bis(2-Ethylhexyl)phthalate	mg/kg	NA	5.41E+03	1.82E-01	ND					ND					4.80E-02	J			

Table 5-5

Sediment Analytical Results
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Parcel					FTA-197					FTA-197				
Sample Location					FTA-197-SW/SD06					FTA-197-SW/SD07				
Sample Number					CA1008					CA1009				
Sample Date					24-Jan-00					24-Jan-00				
Sample Depth (Feet)					0- .5					0- .5				
Parameter	**Units**	**BKG[a]**	**SSSL[b]**	**ESV[b]**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**	**Result**	**Qual**	**>BKG**	**>SSSL**	**>ESV**
METALS														
Aluminum	mg/kg	8.59E+03	1.15E+06	NA	1.22E+04		YES			9.79E+03		YES		
Antimony	mg/kg	7.30E-01	4.22E+02	1.20E+01	ND					ND				
Arsenic	mg/kg	1.13E+01	5.58E+01	7.24E+00	9.60E+00				YES	8.20E+00				YES
Barium	mg/kg	9.89E+01	8.36E+04	NA	9.40E+01	J				4.76E+01	J			
Beryllium	mg/kg	9.70E-01	1.50E+02	NA	1.70E+00	J	YES			1.00E+00	J	YES		
Calcium	mg/kg	1.11E+03	NA	NA	1.08E+03					2.12E+03		YES		
Chromium	mg/kg	3.12E+01	2.79E+03	5.23E+01	2.28E+01					2.34E+01				
Cobalt	mg/kg	1.10E+01	6.72E+04	5.00E+01	1.66E+01		YES			9.80E+00				
Copper	mg/kg	1.71E+01	4.74E+04	1.87E+01	3.51E+01		YES		YES	2.68E+01		YES		YES
Iron	mg/kg	3.53E+04	3.59E+05	NA	4.54E+04		YES			3.89E+04		YES		
Lead	mg/kg	3.78E+01	4.00E+02	3.02E+01	2.51E+01					2.17E+01				
Magnesium	mg/kg	9.06E+02	NA	NA	3.87E+03		YES			3.50E+03		YES		
Manganese	mg/kg	7.12E+02	4.38E+04	NA	9.72E+02		YES			4.37E+02				
Mercury	mg/kg	1.10E-01	2.99E+02	1.30E-01	7.00E-02	B				5.30E-02	B			
Nickel	mg/kg	1.30E+01	1.76E+04	1.59E+01	2.79E+01		YES		YES	2.34E+01		YES		YES
Potassium	mg/kg	1.01E+03	NA	NA	7.64E+02					4.10E+02	J			
Thallium	mg/kg	1.30E-01	7.78E+01	NA	ND					ND				
Vanadium	mg/kg	4.09E+01	4.83E+03	NA	3.72E+01					3.52E+01				
Zinc	mg/kg	5.27E+01	3.44E+05	1.24E+02	9.17E+01	J	YES			1.27E+02	J	YES		YES
VOLATILE ORGANIC COMPOUNDS														
1,1,1-Trichloroethane	mg/kg	NA	2.11E+05	1.70E-01	1.20E-03	B				1.10E-03	B			
Methylene chloride	mg/kg	NA	9.84E+03	1.26E+00	3.50E-03	B				2.60E-03	B			
SEMIVOLATILE ORGANIC COMPOUNDS														
bis(2-Ethylhexyl)phthalate	mg/kg	NA	5.41E+03	1.82E-01	ND					6.70E-02	J			

Analyses performed by Quanterra Environmental Services using U.S. Environmental Protection Agency (EPA) SW-846 analytical methods, including Update III methods where applicable.

[a] Bkg - Background. Concentration listed is two times (2x) the arithmetic mean of background metals concentration given in Science Applications International Corporation (1998), *Final Background Metals Survey Report, Fort McClellan, Alabama,* July.

[b] Recreational site user site-specific screening level (SSSL) and ecological screening value (ESV) as given in IT Corporation (2000), *Final Human Health and Ecological Screening Values and PAH Background Summary Report, Fort McClellan, Calhoun County, Alabama,* July.

B - Analyte detected in laboratory or field blank at concentration greater than the reporting limit (and greater than zero).

J - Result is greater than method detection limit but less than or equal to reporting limit.

mg/kg - Milligrams per kilogram.

NA - Not available.

ND - Not detected.

Qual - Data validation qualifier.

(five locations), iron (four locations), and nickel (six locations), the concentrations of these metals were within the range of background values.

Volatile Organic Compounds. Fourteen VOCs were detected in surface and depositional soil samples collected at the ASP. The methylene chloride results, sixteen of the 1,1,1-trichloroethane (TCA) results, one of the acetone results, and one of the toluene results were flagged with a "B" data qualifier, signifying that these compounds were also detected in an associated laboratory or field blank sample. VOC concentrations in the surface and depositional soil samples ranged from 0.00073 mg/kg to 0.29 mg/kg, and the cumulative concentration was 1.58 mg/kg.

VOC concentrations in surface and depositional soils were below SSSLs and ESVs.

Semivolatile Organic Compounds. Sixteen SVOCs, including twelve PAH compounds and four non-PAH compounds, were detected in surface and depositional soil samples collected at the ASP. Fourteen of the bis(2-ethylhexyl)phthalate (BEHP) results were flagged with a "B" data qualifier, signifying that this compound was also detected in an associated laboratory or field blank sample. SVOCs were not detected at four locations, and BEHP was the only detected SVOC at twenty-three additional sample locations. Ten of the sixteen detected SVOCs were present in the sample collected at FTA-197-GP08. SVOC concentrations in the surface and depositional soil samples ranged from 0.0022 mg/kg to 1.2 mg/kg, and the cumulative concentration was 11.8 mg/kg.

SVOC concentrations in surface and depositional soils were below SSSLs.

The concentrations of the PAHs fluoranthene and pyrene exceeded ESVs at two sample locations (FTA-197-GP07 and FTA-197-GP08). However, the concentrations of these compounds were below the PAH background screening values. Also, the non-PAH compound BEHP exceeded the ESV at three locations (FTA-197-DEP02, FTA-197-DEP07, and FTA-197-DEP09).

Pesticides. Seven pesticides, including 4,4'-dichlorodiphenyldichloroethane (DDD), 4,4'-dichlorodiphenyldichloroethene (DDE), 4,4'-dichlorodiphenyltrichloroethane (DDT), aldrin, endosulfan II, beta-betahexachlorocyclohexane (BHC), and delta-BHC, were detected in surface and depositional soil samples collected at the ASP. The pesticide results were flagged with a “J” data qualifier indicating that the results were greater than the method detection limit but less than

the RL. Pesticides were not detected at twenty-nine of the surface and depositional soil sample locations. Sample location FTA-197-GP24 contained four of the seven detected pesticides. Pesticide concentrations in the surface and depositional soil samples ranged from 0.0007 mg/kg to 0.0035 mg/kg, and the cumulative concentration was 0.0243 mg/kg.

The pesticide concentrations in surface and depositional soils were below SSSLs.

The concentrations of 4,4'-DDE (FTA-197-GP24), 4,4'-DDT (FTA-197-DEP03 and FTA-197-MW08), and beta-BHC (FTA-197-MW07) exceeded ESVs.

Herbicides. Herbicides were not detected in any of the surface and depositional soil samples collected at the ASP.

Nitroexplosives. Nitroexplosives were not detected in any of the surface and depositional soil samples collected at the ASP.

PCBs. PCBs were not detected in any of the surface and depositional soil samples collected at the ASP.

5.2 Subsurface Soil Analytical Results

Twenty-eight subsurface soil samples were collected for chemical analyses at the ASP. Subsurface soil samples were collected at depths greater than 1 foot bgs at the locations shown on Figure 3-1. Analytical results were compared to residential human health SSSLs and metals background screening values, as presented in Table 5-2.

Metals. Twenty-two metals were detected in subsurface soil samples collected at the ASP. The samples collected from locations FTA-197-GP24 and FTA-197-GP25 each contained twenty-one of the twenty-two detected metals. Sixteen of the mercury results, eight of the sodium results, and six of the thallium results were flagged with a "B" data qualifier, signifying that these metals were also detected in an associated laboratory or field blank sample.

The concentrations of nine metals (aluminum, arsenic, barium, beryllium, chromium, iron, manganese, thallium, and vanadium) exceeded residential human health SSSLs. However, with the exceptions of arsenic (FTA-197-GP01 and FTA-197-GP02), beryllium (FTA-197-GP01 and FTA-197-GP02), iron (seven locations), and manganese (FTA-197-GP01), the concentrations of

these metals were below their respective background concentration or within the range of background values (Appendix H).

Volatile Organic Compounds. Nine VOCs (1,1,1-TCA, 1,2,4-trimethylbenzene, 2-butanone, acetone, methylene chloride, naphthalene, toluene, trichlorofluoromethane, and p-cymene) were detected in subsurface soil samples collected at the ASP. The methylene chloride results, seven of the 1,1,1-TCA results, two of the acetone results, one of the 2-butanone results, and one of the naphthalene results were flagged with a "B" data qualifier, signifying that these compounds were also detected in an associated laboratory or field blank sample. VOC concentrations in the subsurface soil samples ranged from 0.00072 mg/kg to 0.036 mg/kg, and the cumulative concentration was 0.29 mg/kg.

The VOC concentrations in subsurface soils were below SSSLs.

Semivolatile Organic Compounds. Five SVOCs, including anthracene, butyl benzyl phthalate, di-n-butyl phthalate, phenanthrene, and BEHP, were detected in subsurface soil samples collected at the ASP. SVOCs were not detected at five sample locations. Twelve of the BEHP results were flagged with a "B" data qualifier, signifying that this compound was also detected in an associated laboratory or field blank sample. In addition, BEHP was the only detected SVOC at eighteen sample locations. SVOC concentrations in the subsurface soil samples ranged from 0.04 mg/kg to 0.22 mg/kg, and the cumulative concentration was 2.38 mg/kg.

The SVOC concentrations in subsurface soils were below SSSLs.

Pesticides. The pesticide alpha-BHC was detected in one subsurface soil sample (FTA-197-GP09) collected at the ASP at a concentration below the SSSL.

Herbicides. Herbicides were not detected in any of the subsurface soil samples collected at the ASP.

Nitroexplosives. Nitroexplosives were not detected in any of the subsurface soil samples collected at the ASP.

PCBs. PCBs were not detected in any of the subsurface soil samples collected at the ASP.

5.3 Groundwater Analytical Results

Eight permanent monitoring wells were installed and sampled at the ASP at the locations shown on Figure 3-1. Analytical results were compared to residential human health SSSLs and metals background screening values, as presented in Table 5-3.

Metals. Nineteen metals were detected in groundwater samples collected at the ASP. Five of the aluminum results, one of the barium results, one of the beryllium results, one of the copper results, and two of the zinc results were flagged with a "B" data qualifier, signifying that these metals were also detected in an associated laboratory or field blank sample.

The concentrations of antimony (FTA-197-MW07), arsenic (FTA-197-MW07), barium (FTA-197-MW07), iron (five locations), manganese (seven locations), and thallium (FTA-197-MW05) exceeded SSSLs. However, with the exceptions of antimony (FTA-197-MW07) and thallium (FTA-197-MW05), the concentrations of these metals were below the respective background concentration or within the range of background values (Appendix H).

Volatile Organic Compounds. Acetone, carbon disulfide, and chloromethane were detected in groundwater samples collected at the ASP. VOCs were not detected in the samples collected at locations FTA-197-MW04 and FTA-197-MW07. Except for one chloromethane result, the VOC results were flagged with a "B" data qualifier, signifying that these compounds were also detected in an associated laboratory or field blank sample. VOC concentrations in the groundwater samples ranged from 0.00012 milligrams per liter (mg/L) to 0.0056 mg/L, and the cumulative concentration was 0.021 mg/L.

VOC concentrations in groundwater were below SSSLs.

Semivolatile Organic Compounds. BEHP was detected in one of the groundwater samples (FTA-197-MW07) collected at the ASP at a concentration below the SSSL.

Pesticides. Two pesticides (4,4'-DDD and endrin aldehyde) were detected in groundwater samples collected at the ASP. Pesticide concentrations in the groundwater samples ranged from 0.000015 mg/L to 0.000059 mg/L, and the cumulative concentration was 0.00015 mg/L. The pesticide concentrations in groundwater were below SSSLs.

Herbicides. Herbicides were not detected in any of the groundwater samples collected at the ASP.

Nitroexplosives. The nitroexplosive compound 2-nitrotoluene was detected in two groundwater samples (FTA-197-MW01 and FTA-197-MW02), and RDX was detected in one groundwater sample (FTA-197-MW03) collected at the ASP.

The RDX concentration (0.00074 mg/L) at FTA-197-MW03 exceeded the SSSL (0.00066 mg/L).

PCBs. PCBs were not detected in any of the groundwater samples collected at the ASP.

5.4 Surface Water Analytical Results

Five surface water samples were collected at the ASP at the sample locations shown on Figure 3-1. Analytical results were compared to recreational site user human health SSSLs, ESVs, and metals background screening values, as presented in Table 5-4.

Metals. Fifteen metals were detected in surface water samples collected at the ASP. Two of the aluminum, two of the manganese, and one of the nickel results were flagged with a "B" data qualifier, signifying that these metals were also detected in an associated laboratory or field blank sample.

The metals concentrations in surface water were below SSSLs.

Aluminum (four locations), barium (five locations), iron (three locations), lead (FTA-197-SW/SD05), mercury (five locations), and zinc (FTA-197-SW/SD05) concentrations exceeded ESVs. With the exception of the mercury results, for which a background concentration was not available, the concentrations of these metals were below the respective background concentration or within the range of background values as determined by SAIC (1998) (Appendix H).

Volatile Organic Compounds. Two VOCs (1,1,2,2-tetrachloroethane and acetone) were detected in surface water samples collected at the ASP. The acetone results were flagged with a "B" data qualifier, signifying that this compound was also detected in an associated laboratory or field blank sample. VOC concentrations in the surface water samples ranged from 0.00056 mg/L to 0.0014 mg/L, and the cumulative concentration was 0.0033 mg/L.

The VOC concentrations in surface water were below SSSLs and ESVs.

Semivolatile Organic Compounds. SVOCs were not detected in the surface water samples collected at the ASP.

Pesticides/Herbicides. Pesticides and herbicides were not detected in the surface water samples collected at the ASP.

Nitroexplosives. Nitroexplosives were not detected in the surface water samples collected at the ASP.

PCBs. PCBs were not detected in the surface water samples collected at the ASP.

5.5 Sediment Analytical Results

Five sediment samples were collected at the ASP. Samples were collected from the upper 0.5-foot of sediment at the sample locations shown on Figure 3-1. Analytical results were compared to recreational site user human health SSSLs, ESVs, and metals background screening values, as presented in Table 5-5.

Metals. Nineteen metals were detected in the sediment samples collected at the ASP. Each of the detected metals was present in the sediment sample from FTA-197-SW/SD05. Each of the other four sediment sample locations contained seventeen of the nineteen detected metals. Five of the mercury results and one of the thallium results were flagged with a "B" data qualifier, signifying that these metals were also detected in an associated laboratory or field blank sample.

The metals concentrations in sediments were below SSSLs.

Arsenic (three locations), copper (three locations), nickel (three locations), and zinc (two locations) concentrations exceeded ESVs. However, with the exception of the zinc results, the concentrations of these metals were below the respective background concentration or within the range of background values (Appendix H).

Volatile Organic Compounds. Methylene chloride and 1,1,1-TCA were detected in each of the sediment samples collected at the ASP. The analytical results were flagged with a "B" data qualifier, signifying that these compounds were also detected in an associated laboratory or field

blank sample. VOC concentrations in the sediment samples ranged from 0.00091 mg/kg to 0.0035 mg/kg, and the cumulative concentration was 0.019 mg/kg.

VOC concentrations in sediments were below SSSLs and ESVs.

Semivolatile Organic Compounds. BEHP was detected in two of the sediment samples collected at the ASP. The BEHP concentrations were below the SSSL and ESV.

Pesticides/Herbicides. Pesticides and herbicides were not detected in the sediment samples collected at the ASP.

Nitroexplosives. Nitroexplosives were not detected in the sediment samples collected at the ASP.

PCBs. PCBs were not detected in the sediment samples collected at the ASP.

Total Organic Carbon. The sediment samples were analyzed for TOC content. TOC concentrations in the five sediment samples ranged from 2,790 mg/kg to 9,700 mg/kg. The TOC results are summarized in Appendix E.

Grain Size. The results of grain size analysis for the sediment samples are included in Appendix E.

6.0 Summary and Conclusions and Recommendations

IT, under contract with USACE, completed an SI at the ASP and Building 4416, Parcels 197(7) and 199(7), at FTMC in Calhoun County, Alabama. The SI was conducted to determine whether chemical constituents are present at the site and, if present, whether the concentrations would present an unacceptable risk to human health or the environment. The SI at the ASP consisted of the sampling and analyses of 30 surface soil samples, 28 subsurface soil samples, 10 depositional soil samples, 8 groundwater samples, 5 surface water samples, and 5 sediment samples. In addition, 8 permanent groundwater monitoring wells were installed in the residuum groundwater zone to facilitate groundwater sample collection, and to provide site-specific geological and hydrogeological characterization information.

The analytical results indicate that metals, VOCs, SVOCs, and chlorinated pesticides were detected in the environmental media sampled. In addition, two nitroexplosive compounds were detected in three of the groundwater samples collected. PCBs, chlorinated herbicides, and OP pesticides were not detected in any of the media sampled. Analytical results were compared to human health SSSLs and ESVs. The SSSLs and ESVs were developed by IT for human health and ecological risk evaluations as part of the ongoing SIs being performed under the BRAC Environmental Restoration Program at FTMC. Additionally, metals results exceeding the SSSLs and ESVs were compared to media-specific background concentrations (SAIC, 1998), and SVOC concentrations exceeding SSSLs and ESVs in surface soils were compared to PAH background screening values (IT, 2000b).

The potential impact to human receptors is expected to be minimal. Although the southern half of the site is projected for use as an industrial area and the northern half is projected for use as a passive recreation area, the soils and groundwater data were screened against residential human health SSSLs to evaluate the site for possible unrestricted future use. The metals that exceeded residential human health SSSLs, with a few limited exceptions, were below their respective background concentration or within the range of background values, and thus do not pose an unacceptable risk to future human receptors. The nitroexplosive compound RDX was detected in one groundwater sample at a concentration (0.00074 mg/L) marginally exceeding the SSSL (0.00066 mg/L). VOC, SVOC, and pesticide concentrations in site media were below SSSLs.

Six metals were detected in site media (primarily surface and depositional soils) at concentrations exceeding ESVs and background concentrations. In addition, the concentrations of three SVOCs and three pesticides exceeded ESVs in a limited number of surface soil samples. The site is a

fenced-in, well-developed area consisting of buildings and paved roads, and is projected for use as an industrial/passive recreation area. Based on the low levels and limited spatial distribution of the metals and chemical compounds detected, the threat to ecological receptors is expected to be low.

Based on the results of the SI, past operations at the ASP and Building 4416, Parcels 197(7) and 199(7), do not appear to have adversely impacted the environment. The metals and organic compounds detected in site media do not pose an unacceptable risk to human health or the environment. Therefore, IT recommends "No Further Action" and unrestricted land reuse with regard to hazardous, toxic, and radioactive waste at the ASP and Building 4416, Parcels 197(7) and 199(7).

7.0 References

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APPENDIX A

SAMPLE COLLECTION LOGS AND ANALYSIS REQUEST/CHAIN OF CUSTODY RECORDS

APPENDIX B

BORING LOGS AND WELL CONSTRUCTION LOGS

APPENDIX C

WELL DEVELOPMENT LOGS

APPENDIX D

SURVEY DATA

Appendix D

Survey Data
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Sample Location	Northing	Easting	Ground Elevation (ft msl)	Top of Casing Elevation (ft msl)
FTA-197-DEP01	1173729.24	673070.83	804.57	NA
FTA-197-DEP02	1173835.57	673082.48	804.08	NA
FTA-197-DEP03	1173951.81	673025.74	804.22	NA
FTA-197-DEP04	1174340.23	672987.36	808.18	NA
FTA-197-DEP05	1174853.56	672970.27	793.18	NA
FTA-197-DEP06	1173978.55	673592.54	832.00	NA
FTA-197-DEP07	1174129.80	673788.28	850.21	NA
FTA-197-DEP08	1175244.49	673805.88	808.90	NA
FTA-197-DEP09	1175099.10	673484.14	800.11	NA
FTA-197-DEP10	1173713.41	672862.91	798.03	NA
FTA-197-GP01	1175173.74	674285.00	823.72	NA
FTA-197-GP02	1175222.27	674234.29	820.54	NA
FTA-197-GP03	1175197.89	673915.51	808.87	NA
FTA-197-GP04	1175183.84	673888.25	810.61	NA
FTA-197-GP05	1175286.57	673539.67	802.05	NA
FTA-197-GP06	1175229.59	673545.12	805.95	NA
FTA-197-GP07	1175001.98	673297.81	800.33	NA
FTA-197-GP08	1175021.00	673200.03	797.73	NA
FTA-197-GP09	1174926.03	673192.94	799.70	NA
FTA-197-GP10	1174930.53	673128.55	798.76	NA
FTA-197-GP11	1174850.06	673012.10	797.55	NA
FTA-197-GP12	1174845.53	673096.24	800.03	NA
FTA-197-GP13	1174502.03	672965.64	805.61	NA
FTA-197-GP14	1174495.99	672875.75	800.67	NA
FTA-197-GP14(SS)	1174498.53	672905.64	802.52	NA
FTA-197-GP15	1174182.74	672980.88	807.82	NA
FTA-197-GP16	1174078.47	672909.73	802.78	NA
FTA-197-GP17	1173950.99	672914.25	800.24	NA
FTA-197-GP17(SS)	1173979.83	672938.34	802.64	NA
FTA-197-GP18	1173818.29	672923.39	800.63	NA
FTA-197-GP18(SS)	1173840.75	672947.52	802.67	NA
FTA-197-GP19	1174246.31	673813.78	865.80	NA
FTA-197-GP20	1173984.43	673615.58	836.86	NA
FTA-197-GP21	1174184.87	673249.81	830.64	NA
FTA-197-GP22	1174148.82	673282.06	832.12	NA
FTA-197-GP23	1174493.90	673169.48	830.67	NA
FTA-197-GP24	1174500.65	673217.97	845.30	NA
FTA-197-GP25	1174273.04	673014.14	808.22	NA
FTA-197-GP26	1174110.29	673022.49	807.92	NA
FTA-197-GP27	1173678.54	672952.00	802.85	NA
FTA-197-GP28	1173629.78	672958.64	802.80	NA

Appendix D

Survey Data
Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7)
Fort McClellan, Calhoun County, Alabama

Sample Location	Northing	Easting	Ground Elevation (ft msl)	Top of Casing Elevation (ft msl)
FTA-197-MW01	1175243.00	674134.22	806.62	806.32
FTA-197-MW02	1174968.82	673040.87	782.76	782.53
FTA-197-MW03	1174522.44	672850.36	787.51	787.32
FTA-197-MW04	1174054.21	672872.19	789.33	789.13
FTA-197-MW05	1174621.75	673959.75	932.41	934.89
FTA-197-MW06	1173772.56	673273.07	801.09	800.88
FTA-197-MW07(W)	1174188.61	673785.44	847.82	847.55
FTA-197-MW08	1173947.70	673554.77	819.86	819.64
FTA-197-SW/SD01	1175073.85	674399.18	820.69	NA
FTA-197-SW/SD02	1175307.22	673859.72	804.99	NA
FTA-197-SW/SD05	1174998.75	673080.07	792.83	NA
FTA-197-SW/SD06	1174870.41	673183.09	796.82	NA
FTA-197-SW/SD07	1173892.34	672874.48	798.23	NA

Horizontal coordinates referenced to the U.S. State Plane Coordinate System, Alabama East Zone, North American Datum of 1983 (NAD83).

Elevations referenced to the North American Vertical Datum of 1988 (NAVD88).

ft msl - Feet mean sea level
NA - Not available, well not installed.

APPENDIX E

SUNMARY OF VALIDATED ANALYTICAL DATA

APPENDIX F

DATA VALIDATION SUMMARY REPORT

APPENDIX G

VARIANCES/NONCONFORMANCES

APPENDIX H

SUMMARY STATISTICS FOR BACKGROUND MEDIA FORT MCCLELLAN, ALABAMA

ATTACHMENT A

VALIDATION QUALIFIER DATA ENTRY VERIFICATION